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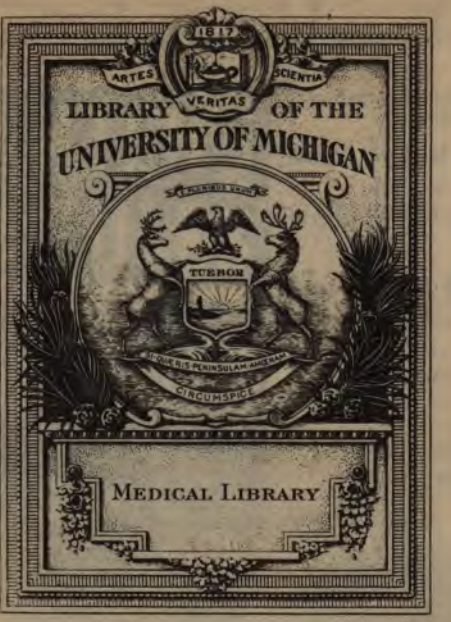

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BEING

A Half-Yearly Journal

CONTAINING A RETROSPECTIVE VIEW OF EVERY DISCOVERY AND PRACTICAL IMPROVEMENT IN THE MEDICAL SCIENCES.

EDITED BY

JAMES BRAITHWAITE, M.D.LOND.,

OBSTETRIC PHYSICIAN AND SURGEON TO THE LEEDS GENERAL INFIRMARY, LATE LECTURER ON DISEASES OF WOMEN AND CHILDREN, LEEDS SCHOOL OF MEDICINE, FELLOW AND LATE VICE-PRESIDENT OF THE OBSTETRICAL SOCIETY OF LONDON, CORRESPONDING FELLOW OF THE GYNÆCOLOGICAL SOCIETY OF BOSTON, U.S.;

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Synopsis.

AN ABSTRACT OF THE MOST PRACTICAL ARTICLES IN THIS VOLUME, WITH OTHER SHORT ARTICLES FROM THE MEDICAL JOURNALS, SHOWING THE MOST IMPORTANT INDICATIONS OF TREATMENT, PUBLISHED BY DIFFERENT WRITERS DURING THE HALF YEAR.

ARRANGED ALPHABETICALLY.

GENERAL MEDICINE AND THERAPEUTICS.

ADDISON'S DISEASE.

The exact pathology of Addison's disease is one that is still more or less shrouded in mystery, and Hausemann mentions that in only 88 per cent. of the cases clinically recognised as Addison's disease have diseased suprarenal bodies been found. In an article in the *Berlin Klin. Woch.* for April 6, 1896, this observer goes into the pathology of the disease, and remarks that, since the adrenals are not always found diseased, primary lesions in the solar plexus, splanchnic nerves, and spinal cord have been sought for, but those found have been so slight as hardly to be sufficient to account for Addison's disease, and they are even less constant than those found in the suprarenal bodies themselves. On the other hand these glands have been found quite destroyed without the appearance of Addison's disease. Hausemann quotes a case in which they were entirely disorganised by secondary new growth without the complex symptoms of the disease in question. Then there are cases of Addison's disease where the suprarenal bodies have been intact, but, perhaps, the changes in cells are hardly well enough known to speak with any real certainty on this point. The relation of Addison's disease to the suprarenals is very much the same as that of diabetes to the pancreas. A simple aplasia of the suprarenals has been known to occur where all the elements of the healthy gland are present, yet in too small a degree. This aplasia has a definite relation to defective development of other parts of the body, as Hausemann has seen in eight cases of anencephaly. There is never any trace of Addison's disease in this aplasia. Hausemann records a very remarkable case of Addison's disease in which the suprarenals were about the usual

size, yet the cortical substance of the glands was proved, both by the naked eye and by the microscope, to be absent. There was some evidence of a slight inflammatory lesion present, yet it could not be determined with certainty whether the changes were the results of a progressive pathological process, or of a defective development. No lesion was found in the solar plexus, &c., and there were no changes in the rest of the body. Here the absence of the cortical substance in the suprarenals must have been the direct cause of Addison's disease. (Medical Times and Hospital Gazette, July 18, 1896.)

ALIMENTATION, SUBCUTANEOUS.

In a communication to the *Münchener med. Woch.*, August 4, Fritz Voit reports some experiments with subcutaneous alimentation. Leube had before injected melted butter in the dog, made lean by restricted diet, and at exploratory laparotomy found that it had been laid up in the form of fat. This fat in states of the system with insufficient heat was completely used by the economy, thus sparing the albuminoids. Leube had no success, however, with sugar in large amounts, but Voit, observing that animals and man did not react alike, injected grape sugar in the latter with success. Of a 10 per cent. solution used with due antiseptic precautions, he found that he could inject subcutaneously (in the thigh) 10, 100, or 1,000 cubic centimetres without inconvenience. As much as 60 grams of grape sugar could be injected without a trace of it being found in the urine subsequently. Lèvrose and galactose could be used as well as dextrose, but lactose and cane sugar reappeared almost entirely in the urine. Sugar could not be used for alimentary purposes by direct injection into the veins of animals, as it was excreted at once with the urine. (Medical Record, October 24, 1896.)

ANÆMIA, PERNICIOUS.

The following summary is taken from Dr. R. C. Cabot's paper in the *Boston Medical and Surgical Journal*, August 6, 1896:—The points most typical in the blood of pernicious anæmia, judging from this series of cases would seem to be the following:—(1) A reduction of the number of red cells to about 1,000,000; (2) the absence of leucocytosis; (3) possibly a relatively high percentage of hæmoglobin in some cases; (4) increase in average diameter of the red cells; (5) the presence of large numbers of polychromatophylic red cells; (6) the presence of nucleated red cells, a minority being normoblasts; (7) the presence of myelocytes; (8) a relatively high percentage of small lymphocytes at the expense of the polymorphonuclear cells.

Anæmia, Pernicious.

Patera (*Rif. Med.*, May 23, 1896) reports the case of a lady, aged 33, seen by him in January, 1895, with a history of severe anæmia, fever, vomiting, insomnia, and extreme debility of a year's duration, and attributed to severe uterine hemorrhage in the early part of 1894. The usual remedies were tried, but with very little success. The red blood-corpuscles were very much diminished in number. There was no albuminuria and no hæmaturia. Some blood was vomited on one or two occasions. Temporary improvement followed the author's treatment, but when next seen in December, 1895, the patient reported herself no better. Daily injections of 5 mg. of sublimate were then practised for the space of two months with excellent results. The anæmia disappeared and the patient radically improved, put on flesh, lost her palpitation, giddiness, and sense of fatigue, and felt well in every way. The author refers to another case of severe anæmia successfully treated in the same manner. It raises the question whether pernicious anæmia may not be due to some hitherto undiscovered germ which is killed by the germicidal action of the sublimate. —*British Medical Journal*, July 18, 1896. (Edinburgh Medical Journal, September, 1896.)

Anæmia, Treatment of Pernicious.

Dr. Alfred Stengel (*Therapeutic Gazette*, 1896, No. 5) considers the specific treatment to consist in the use of these remedies: Iron, arsenic, and bone-marrow. Clinical experience allows no question regarding the value of the first in various anæmic conditions. In certain cases of the pernicious variety good results have been obtained; but in most it is of little value, and it may contribute to the patient's discomfort and unfavourably influence the progress of the disease if it should be administered during its active stage. In convalescence, however it is valuable, as Blaud's pill, iron albuminoid, or one of the physiological preparations. The latter have no special advantage over some of the inorganic preparations, excepting that they may be more acceptable to the stomach, and not so constipating. In many cases arsenic is a specific—in that it has really power to combat the progress of the disease, and perhaps to effect a cure. It may in some way prevent intestinal putrefaction, increase the resisting power of the blood-corpuscles, or increase the hæmogenetic function. Ordinarily Fowler's solution, administered by the mouth in from five to twenty-drop doses three times daily, proves to be sufficient. If the dose has reached this limit without noticeable change in the condition of the blood, great care should be exercised in the further increase of dose. If gastro-intestinal disturbances are feared, it may be administered

hypodermatically in dose from five to ten drops with an equal part of water. The use of bone-marrow can scarcely be said to rest upon a scientific basis, since the marrow is nowise an organic secreting tissue. Regarding the variability in action in different cases, much may depend upon the method of its preparation. The plain marrow cannot always be administered on account of the objection of the patients. The red marrow from the tibia of the calf, mixed with an equal quantity of glycerine and rubbed up in a mortar, results in a preparation of pleasant taste, and one that can be eaten with bread without disturbing the stomach. The preparation may be made more fluid by the addition of claret or port wine. Besides these remedies, measures directed to the improvement of the general circulation and to the prevention of gastro-intestinal fermentation must be adopted. (American Journal of the Medical Sciences, September, 1896.)

ANTIFEBRIN.—Poisoning by.

By Dr. A. E. Brindley. L. G. W., aged 33, housewife, admitted into the Manchester Royal Infirmary, under the care of Mr. G. A. Wright, with some spinal disorder. On admission it was noticed that her face had a marked bluish-grey appearance, the lips and tongue presenting the appearance of having been thinly painted over with dark blue colouring matter. The skin over the body generally was warm and moist, and presented the same bluish-grey colour, the finger-nails and tips of the ears showing this in a marked manner. The patient complained of no distress, there being no dyspnœa on movement and no orthopnœa. Examination of the heart and lungs failed to reveal anything abnormal. The reflexes were normal, and there were no sensory disorders. The conjunctivæ were yellowish, and the urine contained bile in considerable quantity. Spectroscopic examination of the urine gave negative results. The fæces contained bile. Microscopic and spectroscopic examination of the blood gave negative results. On inquiry from the patient it was elicited that she had been in the habit of taking, unknown to her doctor, "Kaputine" powders in order to ease her pain. I was unable to find out satisfactorily the number of powders taken, but the patient admitted having been in the habit of taking them occasionally for the past twelve months, and had taken one immediately before admission. A "Kaputine" powder was obtained from the patient and submitted to chemical examination. Mr. Lyons (one of the dispensers to the institution), who kindly undertook the examination for me, reported that the powder consisted mainly of antifebrin. It was considered, therefore, that the above symptoms were produced by antifebrin. The patient was

treated by salines and milk diet, the symptoms gradually disappeared, so that on June 18 the patient's skin had regained its normal hue and the bile had disappeared from the urine.—(British Medical Journal, September 12, 1896.)

ANTIPYRETICS.

As a therapeutic measure, Kast would very much recommend the cooling bath. He would, however, in very sensitive people, occasionally substitute for the bath medium doses of quinine. All other antipyretics only have a symptomatic nerve effect. Prof. Binz spoke about quinine, which to him seemed the most prominent antipyretic. Quinine acts as an antipyretic by its influence on cells, and acts as well on the leucocytes as on the organic cells, reducing their ability to absorb oxygen and using this for the purpose of raising the temperature. Quinine is a special and general antipyretic. The author reminds us that he had introduced the treatment of typhoid fever by baths, quinine and alcohol in the seventies. Salicylic acid favours an increase of the blood temperature, in the vapour bath both an increase of uric acid, and an increase in the number of leucocytes. Antipyrin (also antifebrin and phenacetin) produce their action through the brain. In isolation (Aronsohn and Sachs) quinine has no power, salicylic acid very little, while antipyrin promptly reduces the temperature. It favours an increase of uric acid, an equalisation of the urates, an increase of heat production in the body, and an increase of heat rays. Tannin, which is greatly opposed to bacteria, probably has the same action as quinine. Alcohol, where it influences temperature, does so only by decreasing it. The heart is stimulated by alcohol, which enables it to force the blood current to the surface of the body, where it comes in contact with the external temperature, and is thus cooled off. To this is added the antiseptic quality of the alcohol, which is antagonistic to the poison of the bacteria of putrefaction. Through its chemical action, also, a post-mortem rise of temperature does not take place. Furthermore the diuretic effect of alcohol is to be considered, which is particularly of use in the rapid elimination of toxines, in the absence of diuresis in fevers. The ingestion of water is also necessary to flush the kidneys, whose ducts have been opened by the alcohol. (Taken from a report of a discussion in the 14th Congress for Internal Medicine, *Der Kinderarzt*, 1896, vii., 73. Pediatrics, September, 15, 1896.)

ANTIPYRIN ERUPTION.

Dr. Webber (*The Lancet*, June 6, 1896, p. 1562) records a case of a female patient, aged 53 years, who had two months previously undergone supra-vaginal amputation of the cervix uteri for

cancer. On December 7, 1895, he found the entire surface of her body covered with a copious eruption exactly resembling in appearance that of a severe case of measles; the face and eyelids were also swollen. The temperature was 101·4° F., and the pulse 102. She had been taking 10-grain powders of antipyrin twice daily for the previous three weeks for the relief of pain extending down the right thigh. These had produced no ill effect, but it appeared that on the evening of December 5 she had eaten some unwholesome food, the result of which no doubt interfered with the proper elimination of the drug. Three grains of calomel and a mixture of ammonium acetate were prescribed, and the next morning the skin was almost free from eruption, the swelling of the face had subsided, and the temperature had fallen to 98°. The antipyrin was omitted and pills containing a quarter of a grain of morphia were substituted. Finding, however, that these did not relieve the pain so well as the antipyrin had done, after a few days the patient recommenced taking the powders. After the second dose swelling and redness of the face came on, and she had to again leave them off. No symptoms of cardiac depression appeared to be produced by the drug in this case. (Medical Chronicle, September, 1896.)

BROMIDES, EXCEPTIONAL EFFECTS OF.

Dr. S. Weir Mitchell (*University Medical Magazine*, 1896, p. 661) notes, among the effects, irritability, increase of irritability or melancholy at menstruation, bad temper, suicidal or homicidal tendencies, temporary delusions in trauma affecting the brain, and exceptionally melancholia may rise to the grade of danger and occasion suicidal impulses. In one instance when irritability followed the use of bromides, excitability could be as easily and more quickly awakened by the smallest amount of alcoholic stimulus or any large use of tobacco. It is also known that the bromides are competent to give rise to suicidal and homicidal impulses. (American Journal of the Medical Sciences, November, 1896.)

CALF LYMPH, GLYCERINATED.

Dr. Monckton Copeman says that it has been abundantly demonstrated that vaccine lymph, as ordinarily obtained, gives rise, when inoculated into different nutrient media, of which plate cultivations are subsequently made, to growths of various "extraneous" saprophytic organisms. If, however, previous to making a plate cultivation the lymph has been intimately mixed with equal parts of a sterilised 50 per cent. solution of chemically pure glycerine in water and subsequently kept protected from the air and light in hermetically sealed capillary tubes, for a period

of from a few days to a couple of months, it will be found that all "extraneous" organisms have now been killed out and no growths occur in gelatine or agar plates inoculated with the contents of such tubes. In glycerinated calf lymph properly produced we have therefore a preparation which, while even more active as vaccine than the original lymph, can, to the best of my belief, be produced absolutely free from the "extraneous" organisms which at one time or another have been isolated from fresh or stored lymph, with the possible solitary exception when the lymph is obtained from the calf, of bacillus subtilis, the common hay bacillus, which, however, possesses no pathogenic properties. (British Medical Journal, May 23, 1896.)

CANNABIS INDICA, POISONING BY.

By Dr. John Attlee. T. T., aged 12, a well-grown but rather pale schoolboy, had been attending the Children's Hospital, Shadwell, as an out-patient, suffering with headache. Nothing organically wrong was found beyond slight anæmia and lack of tone, and he was accordingly ordered a tonic. I saw him early on the morning of September 9, 1895, and found him still suffering from headache. I prescribed for him 10-minim doses of the tincture of cannabis indica three times a day. He went at once to his home, which was about 100 yards distant from the hospital. In about three-quarters of an hour he returned to the hospital, supported by his mother, who gave the following history:—On reaching home her son at once took a dose of the medicine, and in a few minutes said he felt a burning pain in the pit of his stomach, and soon became strange in his manner, saying that his legs were jumping about, that he heard a ticking like a watch, that he saw the room on fire and the pictures falling down, &c. She then brought him back to the hospital with considerable difficulty, owing to his inability to walk by himself. On admission he looked extremely ill, very pale, anxious, and distressed. He complained of no pain, but he was much collapsed. His pulse was 120—scarcely perceptible at the wrist. The pupils were dilated, but acted sluggishly to the light. He was at once laid on a couch, covered with blankets, and given 2 drachms of brandy in hot water, and, immediately after this, 10 gr. of citric acid in syrup of lemon. A blister was applied to the nape of the neck. He soon began to revive, his colour improved, and in about two hours and a half had recovered, and said he felt quite well, his headache had gone, and he was able to walk back to his home. On examining the bottle it was seen that the correct dose of medicine had been taken, and it was ascertained there was no mistake in the dispensing. Some of the tincture from the same dispensing bottle was given to another child the same morning

and subsequently with no ill effects. It was not a freshly-made tincture, having been in stock and in use for about two months. *Remarks.*—The interest of the case lies in the smallness of the dose which caused the poisoning, and also in the short duration of the symptoms. In looking up the literature on the subject I can only find one other case recorded of so small a dose causing toxic effects, and this was reported by Mr. Roche in *The Lancet* of 1871 (vol. ii, p. 493), and is mentioned in Taylor's work on "Poisons." It was the case of a lady, aged 30, in which 7 minims caused narcotism. I am indebted to Dr. Hayward, whose out-patients I was taking at the time, for kindly allowing me to report this case. (British Medical Journal, October 3, 1896.)

CHLOROSIS, SUDDEN DEATH IN.

(*L'Union Méd.*, No. 12, 1896, p. 141.)—Hayem showed to the Société Médicale des Hôpitaux the heart and other specimens from a young woman, who died from the effects of sudden emotion while under treatment for chlorosis. She had previously suffered from phlebitis in the left leg; and when she came under Hayem's charge, presented the usual symptoms of chlorosis, with a small pulse, and a strong and irregular cardiac impulse. There was a thrill at the apex, and a variable bruit on auscultation, sometimes resembling a friction sound, sometimes a valvular murmur, and sometimes with an additional bruit, giving the rhythm of a *bruit de galop*. Change of position did not modify this abnormal bruit. Lungs and other organs sound. Post-mortem, the pulmonary artery was found entirely obstructed by clots, some old and adherent, others recent, extending from the heart upwards. Heart small, in the right ventricle, and on the inter-ventricular septum were numerous cauliflower-like vegetations; near the infundibulum, a large clot, partly adherent by a fibrous portion, incrusted with calcareous deposit, and covered partly by a prolongation of the endocardium. The extremity of this clot was also covered with *débris* of recent formation, like that in the pulmonary artery. Probably the phlebitis was accompanied by endocarditis, and then by obstruction of the pulmonary artery of a slowly advancing kind. There was no pulmonary embolism, but the lungs were collapsed and infiltrated in a diffuse manner with a little blood. (Quarterly Medical Journal, July, 1896.)

CHOLERA, INOCULATION FOR.

Some interesting information regarding the effects of inoculation for cholera is to be found, according to the *Pioneer Mail*, in the report on the railway reconnaissance from Assam to Burmah *viâ* the Hukong valley. Mr. Way, the engineer-in-chief, had

to engage coolie transport, and 357 Khasias were collected at Margherita. Cholera was raging in the neighbourhood at the time, and, in spite of all precautions, the coolies were attacked. Fortunately, Surgeon-Captain Hare was at Dibrugarh, engaged in the special duty of inoculating labourers on the tea gardens, a work which had been begun by Dr. Haffkine some time before. He willingly agreed to deal with the Khasias, and the majority of them submitted to inoculation. The effect was very marked; the deaths among the inoculated were only 2·55 per cent., while among the uninoculated they came to nearly 19 per cent. The disease made such ravages among the latter that the coolies themselves became thoroughly convinced of the efficacy of inoculation, and finally all agreed to undergo the treatment. From that time onward no fresh cases of cholera occurred. Here, then, we have the strongest evidence of the good done by Dr. Haffkine's treatment, and Dr. Hare's report should be widely studied by the medical profession. The coolies were, it is stated, all living in the same camp and under like conditions, so that the experiment was really a most practical one. We need give only one illustration to prove this. Dr. Hare states that the 52 men first dealt with formed a separate group messing together in the same sheds. Of these, 30 were inoculated and 16 left; of the 16 uninoculated 11 developed cholera and died; among the 36 there was only one case, but this terminated fatally. There seems to be no room for doubt that if all the coolies had been inoculated at the outset the disease would have ceased in a few days. (British Medical Journal, December 5, 1896.)

CRETINISM, SPORADIC.

Dr. W. R. Parker (Kendal) gave in the Children's Section of the British Medical Association Meeting, 1896, a lantern demonstration of forty-eight photographs of cretins. The photographs illustrated the effect of thyroid treatment, and formed a most successful and interesting exhibit. Sixty per cent. of the cases were females, and the length of treatment varied from half a year to two years. A large number of the slides were double, showing the cretin on one side before, and on the other after, treatment by thyroid extract. The difference was very marked, those who had been treated were thinner, they had grown remarkably, and had a comparatively intelligent appearance. The protruded tongue, protuberant abdomen, umbilical hernia, and lordosis, with other deformities, were much improved. One child showed livid patches, a kind of purpura (?), all over the body, which, with a prolapse of the anus, yielded to treatment in five months' time. Dr. Parker suggested the query whether, seeing that the thyroid treatment cures these umbilical herniæ

so certainly and speedily, it could not be tried in other forms of rupture. A very interesting case was that of a goitrous cretin. Afterwards came a series of slides of cretins who had not been under this treatment, the youngest of whom was an infant cretin, who lived twenty minutes. One from Queensland showed the development of cretinous characteristics as the patient grew—at two years old, four years, and six. (The Lancet, August 8, 1896.)

DIABETIC BLOOD.—Method of Diagnosing.

Williamson, in the *British Medical Journal*, vol. ii, 1896, p. 731, gives a simple method for making a diagnosis of diabetes by examination of a drop of blood. The amount of grape-sugar in normal blood is from ·05 per cent. to ·15 per cent., while in diabetes it is increased to from ·27 per cent. to ·57 per cent. This increase, slight though it is, has a distinctly increased power of decolourisation of alkaline methyl blue, as can be shown by the following test:—In a small, narrow, clean test tube are placed 40 c. mm. of distilled water. A graduated capillary tube, such as is supplied with Gower's hæmoglobinometer, is necessary for this purpose. The tip of the patient's finger is cleaned, dried, and pricked, and from the exuding drop of blood 20 c. mm. are sucked up into the capillary tube and blown gently into the water at the bottom of the test tube. Then 1 c. cm. of a watery solution of methyl blue, 1-6,000, is added, and finally 40 c. mm. of liquor potassæ, and the contents are mixed by shaking. A control-experiment is performed with non-diabetic blood. The fluid in each tube is of a fairly deep blue. Both are placed in a glass containing water, and this is heated and allowed to boil for about four minutes. The fluid containing diabetic bood changes to a dirty, pale yellow, almost the colour of normal urine. The other fluid becomes a bluish green or pale violet, but never loses its blueness. The tubes must be kept still while in the water-bath, as, if shaken, the methyl blue is oxidised by the air, and may regain a blue tint. This is also the reason why a water-bath must be used for the boiling. Taylor has applied this test thirty times in six cases of diabetes mellitus, and the decolourisation was each time obtained. In 160 examinations made with the blood from healthy patients, and from those affected with divers diseases, the decolourisation did not once take place. (Medical News, November 7, 1896.)

DIPHTHERIA.—Nasal Feeding in.

Dr. Henry Jackson says that the greatest disadvantage of intubation over tracheotomy is the difficulty in feeding. The method of nasal feeding as used at the Boston City Hospital is

as follows:—The child is carefully pinned in a blanket, so that it cannot move its arms. It lies on its back. A glass funnel is attached to the soft rubber catheter with the intervention of a piece of glass tube. The well-oiled catheter is passed quickly but quietly along the floor of the nose. Just as it passes into the œsophagus there is usually slight resistance and choking, otherwise no trouble is found. A small amount of water is allowed to flow down, and, without allowing any air to enter, the milk and medicine are poured immediately into the funnel. At the end of the feeding again a little water is given. Children are usually perfectly quiet as soon as the tube has been passed, and the results with this treatment have been excellent. He summarises the advantages as follows:—First, a definite amount of food and stimulant is given. Second, the child is not as much disturbed as by constant and often ineffectual efforts to force it to take even a small amount of food. Third, in the intervals between feeding the child is not disturbed, and, as it has received a good meal, it usually sleeps quietly. These arguments apply both to cases in hospital and cases in private practice, and the hospital cases have the additional advantage in saving much time and not requiring the undivided attention of a nurse. There is usually no difficulty in passing the tube, and it is also used in other cases, namely, in post-diphtheritic paralysis, where deglutition is interfered with; and in those cases that refuse all nourishment from various causes, namely, pain, lack of desire to have food, prostration, and malnutrition. The results are usually very satisfactory. (Pediatrics, June, 1896.)

DIPHTHERIA. — Post-Diphtheritic Paralysis and Antitoxin.

A case of some interest is related by Dr. Mundorff in a recent number of the *New York Medical Record.* The patient was a tall, strong man, aged 20 years, who had suffered from an attack of diphtheria in December, 1895. He was not treated with antitoxin. A few weeks after his apparent convalescence his articulation became indistinct, there was regurgitation of fluids through his nose, and his voice assumed a nasal tone. On admission to hospital, in March, 1896, he was found to be anæmic and emaciated. His muscles were manifestly wasted, especially the pectorals, deltoids, and the biceps on each side. The pupils were dilated, vision was impaired, but there was no strabismus. The palate was paralysed, the knee-jerks were absent, and the weakness was great. He had an injection of antitoxin and began to improve gradually. A second injection was given, and the progress of the patient continued to be satisfactory until all the bad symptoms had disappeared. It is

interesting to have the record of such a case, but we should hesitate to attach very much importance to the administration of antitoxin. Such cases in adults frequently follow the course of slow but steady improvement, which resulted in this patient, after the proper conditions of rest and good food are obtained, even when no drugs are used. (The Lancet leaderette, August 1, 1896.)

DIPHTHERIA.—Rapid Diagnosis of.

The following is from Dr. Henry Koplik's paper. The time given is much shorter than is usually accepted:—The patient is placed facing the light. A tongue depressor having brought the fauces into view, the sterilised swab is rubbed gently over the suspected membrane or patch in the throat, or even the inflamed tonsils where no membrane exists. The swab is then carefully and evenly rubbed on the slanted surface of the blood-serum culture medium in the test tube. At the end of four hours the growth on the surface of the serum is perceptible even to the naked eye. It can be perceived if the serum is held between the light and the eye as a thin film on the surface of the serum, if the latter is transparent enough. At the end of five hours the growth is a very palpable one. From a clinical standpoint the culture gives diagnostic and very satisfactory results when examined at the end of two and a half to three hours. These results are not improved upon, as will be shown by the results obtained by a longer sojourn in the incubator. The bacteria have only increased in numbers. In some cases it will be shown that to wait puts us at a distinct disadvantage. The surface of the serum, which has been taken out of the incubator at the end of two hours and a half or three hours at the latest, is now carefully scraped with a sterilised platinum wire bent at its extreme point into a minute crook. The scraping is made in a longitudinal direction, and should include, if possible, all the surface where we think the growth has occurred. No attempt is made to pick out any colonies. The scrapings are then spread on a cover glass with a drop of water in the usual manner. The specimen is dried in the flame and stained with the Lœffler alkaline blue. In order to fix a diagnosis we have required in all cases, in addition to general character of size, &c., (*a*) an abundant bacterial growth, not isolated bacilli; (*b*) the characteristic grouping of the Klebs-Lœffler bacillus in groups of pairs or fours, side by side, or more so arranged; (*c*) peculiarities of unevenness in staining with Lœffler alkaline solution of methyl blue; (*d*) the presence of involution forms, club shapes, &c. (New York Medical Journal, August 1, 1896.)

DIPHTHERIA, CONJUNCTIVAL.—Treated by Serum.

Ewetzky (*Berl. klin. Woch.*, August 3, 1896) relates in detail 2 cases. In the first case there was moderate swelling of the eyelids, the membrane could be stripped off readily, the cornea was intact, and the disease was distinctly a local one. In the second case there was evidence of transmission of the disease from a fatal case of faucial diphtheria; there was a diphtheritic affection of the hand, the eyelids were considerably swollen, and the membrane was separated with difficulty. The bacteriological examination left no doubt as to the identity of the disease in the two cases, although some distinguish between croup and diphtheria of the conjunctiva. In the grave form there is exudation into the tissue, successive necrosis and cicatrisation, and frequent and severe corneal complications. The prognosis is very unfavourable. In the superficial form of the disease, however, the diphtheria may extend to adjacent mucous membranes, and thus produce severe symptoms. The author believes that local conditions of the eye have an important bearing on the development and course of the disease. No local treatment was adopted in these cases except the use of weak sublimate solution and stripping off the membrane, chiefly for bacteriological examination. In both cases the disease was progressive, but on the day after the injection of serum improvement was noted. The membrane became thinner, more transparent, and more easily detached. Both patients recovered. The author has found 27 recorded cases of this form of diphtheria treated with serum, but in 6 cases no bacteriological examination was made. In 21 of these the treatment was quite effective. The author admits that the superficial form of the disease usually gets well, but he is convinced that no local remedy acts so efficiently in bringing the process to an end as the serum injections. The rapid improvement is the best protection against injury of the cornea. He recommends disinfectant lotions, and the membrane may be removed provided no injury is inflicted on the underlying tissue. If the secretion is purulent, the use of nitrate of silver is desirable. The author concludes with a strong recommendation for the use of the serum in these cases. (British Medical Journal, August 29, 1896, Epitome par. 183.)

DIPHTHERIA IN CATS.

The subject is of such importance as to warrant the introduction of the letter of Dr. J. O. Symes, D.P.H., here:—The attention of readers of the *British Medical Journal* was drawn to this subject by the leader, "Diphtheria in Domestic Animals" (May 10, 1890). Since that date cases have been reported in the *Journal* by Drs. Edmund Gwynn (November 4, 1893) and

William Williams (July 13, 1895). The following case appears to me to be of such interest as to merit publication:—On January 18, 1896, a lady contracted diphtheria, the attack terminating fatally on January 21. As there were no other cases of diphtheria in the town at that time, and as the patient had not left the neighbourhood during the previous ten days, it was thought that the infection was due to an escape of sewer gas into the interior of the house, and the discovery of serious sanitary defects demonstrated the possibility of such an occurrence. A kitten which had been brought to the house on or about January 4 had been in constant contact with the patient until January 19, and on this account at my suggestion it was removed on January 23, and kept under observation in confinement. It then presented no signs of sickness. On January 29 it was attacked with vomiting and diarrhœa. The neck was slightly swollen, and the fauces showed patches of yellow exudation. These patches extended, and with the continued vomiting and refusal of food the creature became much emaciated. Shortly before death on January 31 the fauces were almost covered with exudation, and there was difficulty in breathing. Unfortunately the body was hastily disposed of before I had an opportunity of making a post-mortem examination or bacteriological culture. Supposing, however, the diagnosis of diphtheria to have been a correct one, this case illustrates the extreme importance of isolating and watching the domestic animals of households in which there may have been infectious disease, otherwise they may become fruitful and unsuspected means of spreading infection. Diphtheria in cats is generally an illness of more than three days' duration. In the cases reported by Dr. William Williams the periods of sickness varied from twelve to sixteen days, and I have met with an instance in which an animal recovered after an illness of still longer duration. There is then the possibility that the kitten was the original source of infection, the initial symptoms being of so slight a nature as to escape observation. The animal had been brought from a distance, and I was unable to procure details as to its history. (British Medical Journal, June 6, 1896.)

DIPHTHERIA.—Serum Treatment of.

The injection of antitoxic serum being of benefit to the patient suffering from diphtheria, aiding him in his struggle against the infection, how is the remedy best applied so as to get the best results? (1) As the result of experience, I should say never inject less than 4,000 normal units of the serum. The dose ought not to be reckoned as so many cubic centimetres, but as so many units. We are rather behindhand in England in this

matter, but I trust it will not be long before the profession will be able to give a large dose in a small compass, *i.e.*, 4,000 or 5,000 units in 5 c.c. (2) Make only one injection at the first time of seeing the patient. (3) Do not go on giving small injections, but give all you want to give to the case in one dose. In the rare cases of relapse a second dose must be given. Give it in every case, and do not wait till the case gets severe. (4) Lastly, give it as early as possible in the case. Do not "try other remedies" before resorting to it; and as the antitoxin does no harm it cannot matter if one or two non-diphtheritic cases have an injection. In future a good supply of strong serum will no doubt be obtainable, and, as I hope, will be the only kind of serum that will be permitted to be sold. If the bulk of the medical profession uses this we shall, I feel sure, find a great reduction in the mortality from the disease. If used in all cases, and early in the disease, it will be found a remedy of great value, lessening the anxiety both of the practitioner and the friends. (From Dr. Sidney Martin's paper in The Lancet, October 17, 1896.)

DISEASE PHYSIOGNOMY.

A great deal may be learned from the general attitude and manner of the child. If it lie in its cot on its back, and take little or no notice of the new comer, it is pretty safe to assume that it is seriously ill, and attention will first be directed to ascertain whether it be suffering from some disorder of the brain or from the exhaustion produced by severe diarrhœa. The attitude of a child with acute pleuro-pneumonia is very different. In the early stage at least it is disposed to sit up, and prefers to be in its nurse's arms. It holds itself stiffly. Even if approached suddenly by a stranger, an action which a healthy child, or one only slightly indisposed, greatly resents, it utters only a short cry, and makes but a slight motion of the head. The face has a malar flush, often on one side only, which is not always that on which the lung is affected; the alæ nasi work, the head is thrown slightly back, and the mouth is not closed. The whole attitude and aspect denote the imperious *besoin de respirer*, the eyebrows slightly oblique, the angles of the mouth lowered, the lips slightly parted, the facial expression "that of suffering, modified by the desire not to cry because of the pain which a long breath would cause." A child suffering from abdominal discomfort will often lie on its belly when asleep, and when awake will support itself on its elbows and knees with its forehead on the pillow. The face has an earthy tint either at all times or for an hour or two after a meal, and the naso-labial line, said to be the first wrinkle produced by age, is well marked, giving the face an old-fashioned and rather

peevish expression. When wasting abdominal disease has continued for some time, the presence of the sucking pads gives the face a very characteristic appearance. These two pads, which are masses of fat isolated from the rest of the adipose tissue of the face, lie over the buccinators, and do not waste to the same degree as the fatty tissue generally in emaciation due to abdominal disorders. Their function, no doubt, is to prevent the falling in of the cheek during sucking. (Dr. Dawson Williams' "Review of Diseases of Children," Practitioner, July, 1896.)

DISINFECTION OF BOOKS BY FORMALIN.

The following are Dr. Horton's conclusions:—(1) Books can be disinfected in a closed space, simply by vapour of commercial formalin by using 1 c.c. of formalin to 300 c.c. or less of air. (2) The vapour of formalin is rapid in its disinfectant action. The effect produced in the first fifteen minutes is practically equivalent to that observed after twenty-four hours. (3) An increase in the amount of air to each c.c. of formalin is not counterbalanced by an increase in the length of time of exposure. (4) In case the disinfection has been incomplete, the vitality of the organisms has been so weakened that they survive only if transferred in a few hours to media suitable for their development. (5) The use of vapour of formalin is not detrimental as far as observed in any manner to the books, nor is it objectional to the operator beyond a temporary irritation of the nose and eyes, somewhat similar to that produced by ammonia. (Medical News, August 5, 1896.)

DISINFECTION OF ROOMS BY SULPHUROUS ACID.

Sulphurous acid disinfection in the experiments failed not more than 4·1 times in every 100, which will serve to show that if disinfection is necessary at all then the common and official method is not "useless." What is required of the method is that it shall disinfect the walls, ceilings, floor, and bare surfaces in a room. No one contends that it—any more than the French and German official methods—has sufficient penetrating power into the bedding, clothing, carpets, curtains, &c. These can and should be removed for steam disinfection. Our method consists of two stages:—(1) The charging of the atmosphere for from six to eight hours with about 1 per cent. of sulphurous acid gas by means of burning one pound of sulphur to every 1,000 cubic feet of space in the room, and (2) the thorough æration of the room. (From Dr. Kenwood's paper, read before the British Medical Association, 1896. The Lancet, August 15, 1896.)

ERYSIPELAS.—Vaseline Treatment of.

Köster (*Therap. Monatshefte*, June, 1896) gives an analysis of 130 cases of erysipelas which he has treated by the vaseline method, and compares the results with those obtained in the same hospital by other modes. The treatment consists in painting the affected and adjacent parts twice daily with vaseline, which is covered over with linen; if the disease affects the face this is put on in the form of a mask, with openings for the nose, eyes, and mouth. The whole is secured by means of a gauze bandage; further treatment is confined to that of complications as they may arise. He finds that the duration of the disease is not shorter with the vaseline treatment than with those by lead lotion, iodine paint, or sublimate lanolin; nor is the spread of the disease prevented any more than by these other methods, which he holds to be ineffectual in this respect. Complications are no more frequent with vaseline than with any other remedy, and the former has the advantages of being inodorous, non-toxic, non-caustic, and, above all, extremely cheap. In other words, Köster considers that the treatment of a simple case of erysipelas depends upon the attention shown to the general condition more than anything else, and that vaseline is therefore as efficacious as any more drastic local application, and at the same time much more pleasant and comforting to the patient. In complicated cases and those in which the general symptoms are more severe no local medicament is of any use. He further points out that his treatment confirms the opinion of Trousseau, who found that the best results were obtained by inunction of castor oil. No bacteriological examination was made in Köster's cases, but he excludes all those in which there could be any possible doubt as to the diagnosis from the statistical investigation. (British Medical Journal Epitome, par. 96, August 1, 1896.)

GRAVES'S DISEASE.—Glycerophosphate of Sodium in.

Allen Starr (*Med. News*, April 18, 1896) has found this drug successful in exophthalmic goître, and in a case where various forms of medical treatment had been tried for 1½ years improvement was apparent within two weeks from the time it was commenced. It is given in 20-grain doses three or four times daily. It was introduced by Trachewsky in Kocher's clinic and found to diminish the size of enlarged thyroid glands, and had also been employed with success by Chibret. (British Medical Journal Epitome, par. 446, June 13, 1896.)

Graves's Disease.—Serotherapy of.

In a case of exophthalmic goitre in a woman, 32 years old, Gioffredi (*Semaine Médicale*, 1896, No. 26, cii) observed improve-

ment follow hypodermic injections of the blood-serum of a thyroidectomised dog presenting all of the phenomena of the cachexia strumipriva. The serum obtained with antiseptic precautions was sterilised, and had added to it ·1 per cent. of cresol. In the course of forty-seven days 37 injections of from ·5 to 1 c.cm. each were made; and after an interval of two weeks 17 additional injections, each of 2 c.cm., in the course of twenty days. In the course of the treatment there was almost complete cessation of the headache, the anorexia, the agitation, the trembling, diminution in the exophthalmos, improvement in the general condition, and a return of menstruation. This result, however, was but temporary, as the symptoms returned gradually upon suspension of the treatment. When the dose of the injection exceeded 1 c.cm. there occurred slight febrile reaction. (Medical News, July 11, 1896.)

GRAVES'S DISEASE IN CHILDREN.

Dr. Dreschfeld gives details of 2 cases of this very rare affection in children, among a total of 42 cases. He then makes the following remarks:—The symptoms of Graves's disease in children do not differ from those of adults as regards the cardinal phenomena. Tremor, so common a symptom in the adult, has only been noted in one of all the recorded cases. Some, however, have been published before the common occurrence of this symptom, which, though mentioned by previous writers, was generally known. Graefe's symptom also appears to be usually absent in children. Of the nervous symptoms besides the vasomotor symptoms, milder psychical symptoms have been noticed. More severe psychical disturbances have rarely been observed. Chorea often forms a complication. The prognosis of Graves's disease in children is not unfavourable. Some cases recovered completely; in many a few symptoms, such as exophthalmos or goitre, remained, but gave rise to no further troubles. In the few cases which ended fatally, the cause of death was due to some intercurrent affection, and not to the disease itself. (The Practitioner, August, 1896.)

GUAIACOL.—Injections of.

Dr. Colleville, of Reims, has just published in a local medical journal the good results he obtained in different painful affections from injections of a mixture composed of chloroform and guaiacol in the proportion of 10 drops of the former to 6 of the latter; the amount injected each time was about 30 drops. A burning sensation follows the injection for about three minutes, giving place subsequently to a feeling of considerable relief as regards the affection treated. These

injections have been tried with complete success in sciatica, the neuralgia of herpes zoster, of locomotor ataxy, &c. The solution has to be kept in an obscure place and the bottle enveloped in blue paper to prevent decomposition. (Medical Press and Circular, October 14, 1896.)

HARROGATE AS A HEALTH RESORT.

I would, therefore, prefer to lay down some general rules for selection of cases rather than to name diseases individually:—(1) Cases convalescent from acute diseases, or those run down, requiring rest and change, may be sent to enjoy the bracing air, with or without taking any of the tonic waters. (2) Cases of anæmia in which the state of the digestive organs renders the ordinary course of iron inoperative may come to try the effect of iron in its natural combinations. (3) Patients whose diseases, caused or conditioned by the retention of the blood or tissues of one or other of the products of defective metabolism, receive benefit from the sulphur salines and baths, as the various organs concerned in their elimination are kept in full activity during the course. In gout and rheumatism the specific effect of sulphur aids in the cure. The course may be taken either to remove the poison already working mischief in the tissues, or when the tendency to accumulate the poison is known to exist, to get rid of it periodically as a prophylactic measure before any evil has arisen. An eliminatory course once a year tends to prevent explosions of gout and rheumatism. (4) The Harrogate treatment may be given with advantage to a patient who, having recovered from an acute articular inflammation, remains with one or more joints crippled. The massage bath is an important feature in the treatment of such cases. (5) The action of the waters on the alimentary canal, coupled with the well-known fact that patients attend much more carefully to diet at a spa than at home, points out the treatment as likely to be successful in all cases of catarrhal conditions of the intestinal canal, whether caused by too good living or otherwise. Personally, I find the results of treatment in cases of chronic gastric catarrh, with constipation or irritative diarrhœa, the most brilliant of any I have to deal with. I have seen, frequently, a tongue clean and a lost appetite return in a very few days after beginning treatment. The treatment is very successful in cases of fæcal accumulation in the colon, a condition often existing when constipation is not complained of. The action of the bowel in these cases is retarded, though the patient may pass a motion daily. (6) Various chronic skin diseases in which sulphur and free elimination of waste products are likely to prove useful. In this regard I feel bound to say that in the treatment of skin diseases I have seldom been able to rely solely

on the sulphur treatment, but have usually to supplement it by local applications. Local applications which have failed before coming to Harrogate often succeed here, probably by reason of the improved condition of the blood and the softening effect of the baths upon the skin. (7) It is not generally known that syphilis is treated here exactly as at Aix-la-Chapelle. (8) I think Harrogate is a good place to send patients to who are suffering from failing heart, particularly if gout be the original cause of it. As I have pointed out, the treatment in vogue at Nauheim can be had here, at least a good imitation of it, and many patients could come here who would not be able to travel to Nauheim. With regard to the time of the year most suitable for treatment, the baths and waters are available all the year round, so that patients coming at any time can be treated. But Harrogate, though bright and dry in winter, is undoubtedly a cold place, and is therefore distinctly a summer spa. It is often too cold in Harrogate, but very rarely too hot, as there is always more or less breeze to temper the sun-rays. The most crowded months are July, August, and September, but there are many advantages gained by coming in April, May, June, or October. (From Dr. Albert Mouillot's paper in the Dublin Journal of Medical Sciences, June 1, 1896.)

INFECTIOUS DISEASES IN CHILDREN.—Heart Failure in.

Sevestre (*Journ. de Clin. et de Therap. Inf.*, No. 1, 1896) says that it is well known that in the infectious diseases of childhood there is frequently a weakness of the heart present of a greater or less degree, particularly in diphtheria, influenza, typhoid fever, &c. More seldom is it present in pneumonia, which seems clearly to prove the influence of the infection in producing this complication. Most certainly a change in the muscular tissue of the heart, an infectious myocarditis, plays an important part here, but at the same time a lowering of arterial tension makes its influence felt. Therefore, in the treatment of infectious diseases, not only should the infection itself be fought by means of internal antiseptics, promotion of the excretion of toxines, cold baths and tonics, but the heart must also be stimulated. This part of the treatment can best be achieved by the use of caffeine. Sevestre is partial to its use before giving the cold baths; furthermore, he employs it as soon as a full, frequent pulse is observed, giving evidence of a weakened heart. The doses recommended are, to a child of five years of age, hypodermically, the following:—℞ Caffeine, 2·00; sod. benzoic, ·04; aquæ destad, 10·00—1 c. cm. to be given two or three times, or else:—℞ Caffeine et sod. benzoic, āā, 1·60; vanillin, ·05; syrup, 50·00; rhum opt., 10·00; aquæ dertill, 60·00.

Mix. Sig.: One teaspoonful for a dose. For raising the arterial tension, Sevestre uses injections of salt solution, 20 grm. of a 0·7 per cent. solution is given twice or three times a day, with or without the caffeine. (Pediatrics, 1896, p. 167.)

INFECTIOUS ILLNESSES.

The *Union médicale* for July 4 publishes the following rules which were recently adopted by the Board of Health of Paris, and were especially designed for the care of school children during the course of epidemic or contagious diseases :—(1) The patient's room should be kept very clean, well aired, and properly heated, according to the various seasons and to the physician's directions. (2) There should be no carpet, no curtains, and as little furniture as possible in the room. (3) The bed should stand out in the room and not in an alcove. (4) No one should be allowed in the room except those who take care of the patient. (5) All food and drinks, except what is absolutely necessary for use, must not remain in the room, and what is not consumed by the patient must be burned or thrown into a jar kept exclusively for this purpose. (6) A bowl containing water should be placed near the patient. into which he may expectorate if necessary, as it is of the greatest importance to keep the sputa moist, for if they become dry they may spread through the air in the form of powder, and in this way cause disease. The contents of the bowl must be thrown into the jar. (7) This special jar must always be half filled with a solution of 750 grains of copper sulphate to a pint of water. (8) During the course of the disease all the furniture, &c., must be kept very clean and exposed every day to the light and sun for as long a time as possible. (9) No broom must be used to clean the room, as this would raise a dust which contained germs, and in this way the disease might be transmitted to other members of the family. Damp sawdust should be spread over the floor and afterwards wiped up with a wet cloth, which should be allowed to soak in boiling water or be burned with the sawdust. (10) No bedding or clothing should be shaken out of the windows. It must be put into a box and sent to the proper place to be disinfected. (11) The dejecta, the urine, the sputa, &c., must be thrown into the special jar, the contents of which are to be emptied into a water-closet or into a hole in the ground, both of which are to be half filled with quicklime; they should also be at a proper distance from water-courses and wells. The jar is then thoroughly cleansed before returning it to the room. (12) The nurse should not eat or drink in the same room with the patient, and before going to meals her hands must be carefully washed and the water thrown into the jar. (13) The

water that is used for drinking, cooking, and cleaning must be boiled during the course of a disease or of an epidemic. (14) After convalescence all objects in the room must be subjected to thorough disinfection as soon as possible, whether they have been used by the patient or not. (15) The patient must not be allowed to go out until after a bath, or to return to school until forty days have elapsed after the onset of the disease (this applies to smallpox, scarlatina, and diphtheria), or sixteen days after measles. These instructions, says the writer, are applicable to adults, also, and may be followed in all epidemic and contagious diseases, such as typhoid fever, miliaria, typhus fever, epidemic dysentery, phthisis, &c. (New York Medical Journal, August 1, 1896.)

INFLUENZA IN CHILDREN.

Dr. Crandall, of New York, read a paper on "The Occurrence of Influenza in Children, with a Report of Local Epidemics." He gave a very interesting account of the occurrence of influenza in children during previous epidemics. He then reported in detail the history of several local epidemics. In one case where seven members of a family of nine contracted the disease, and also other families, in which the appearance of the disease in one member was followed by its appearance in several others. He discussed the characteristics of the disease in infants, the symptoms being about the same as in older children, beginning with a high temperature which came down shortly, and the disease ran a mild course. The most serious complication in infants he found to be the result of the interference to nursing.

Dr. Seibert, in discussing the paper, said he had noticed that in the beginning children suffering from influenza often had a very high temperature, but it shortly fell, and the disease ran the usual course which it does in adults. He reported three cases which occurred in his own family; one, an older child, came home from school with a very high temperature, 106°, which soon dropped, and in three days she was able to go out. A younger child began in the same way, but the disease was more prolonged on account of pneumonia, which complicated the attack. (Pediatrics, July 1, 1896, p. 17.)

LEPROSY.—A Promising Treatment for.

In his paper, Dr. Radcliffe Crocker says that hitherto the treatment of leprosy has depended upon:—(1) Removal of the patient to more favourable conditions of soil, climate, and personal hygiene; (2) the administration of Chaulmoogra oil in adequate doses or of its derivative, gynocardic acid—I exclude gurjun oil, as in this climate, at all events, it is a total failure as far as internal administration is concerned; (3) the inunction

of oleaginous substances, for which also a favourable place is claimed for gurjun oil, but as in two cases when gurjun was rubbed in one side and olive oil on the other the latter was at least as efficacious and certainly much preferred by the patient, even for this purpose not much can be claimed for gurjun oil; and (4) the aim must be to keep off as long as possible the recurrent febrile exacerbations, which may be effected to a considerable extent by guarding the patient against chills and depressing influences of mind and body. It will be seen, therefore, that the drug treatment is practically limited to Chaulmoogra oil, such drugs as quinine and salicylates being useful only in febrile attacks. Chaulmoogra oil, however, in order to get any tangible effect, must be taken in large doses, such as from 50 to 100 minims a day or more, but in a large number of instances these doses are not tolerated by the patient, many being unable to retain as little as three five-minim capsules a day, and anything less than thirty minims a day is, in my opinion, futile. Mercury and iodide of potassium administered by the mouth have had extensive trial in former days, but were of little or no service and have long been abandoned, but I am not aware that mercurial injections have been tried. [Dr. Crocker then relates two cases successfully treated in this way; ½ to ⅛ of a grain was injected once a week at first.] I do not, however, claim to have established anything more than a strong *primâ facie* case for further trial of mercurial injections. The *modus operandi* is, I presume, that of a bactericide acting in the blood, and it is highly probable that other bactericides, if introduced directly into the circulation, would have a similar effect. (The Lancet, August 8, 1896.)

MALARIA.

From experiments we may draw the following conclusions:—(1) The plasmodium malariæ can be transmitted by inoculation; (2) the same type of organism is always obtained; (3) the average length of the period of incubation is from eleven to twelve days; (4) when more than one type of organism is present at the same time, the symptoms are produced by one variety alone, the growth of this type being associated with the disappearance of the other. (From Dr. Whiting's paper in the Journal of the American Medical Association, July 18, 1896.)

Malaria.—Treatment.

Moncorvo (*Rio de Janeiro Centralbl. f. d. g. Therepie*, 1896, xiv, 248) says that the administration of quinine is difficult, both on account of its bitter taste and the intolerance of the baby's stomach. The studies of the author related to helianthus annuus, methyl blue, phenocoll, and asaprol. Helianthus

annuus (the sunflower) inhabits Peru, but is now frequently raised in gardens. His researches were made with an alcoholic extract of this plant made from the leaves and blossoms. In 61 cases of malaria in children, from the ages of 1 month to 12 years, it was given in doses of $\frac{1}{8}$ gr. in 24 hours. The results in most cases were prompt, and not followed by any bad after-effects. In a few cases where quinine had been taken without any result, the effects from this drug were satisfactory. (Pediatrics, September 15, 1896.)

MALARIAL CACHEXIA AND ITS TREATMENT.

At a recent meeting of Société de Thérapeutique, Vidal (*L'Union Médicale*, 1896, No. 24, p. 284) related the results of a clinical study of the malarial cachexia, of which the most conspicuous manifestations are pallor, especially of the face, with a bluish tint of the conjunctivæ, respiratory difficulty, œdema of the legs, puffiness of the face, and distension of the abdomen, with or without ascites. The patients complain of palpitation, of cyanosis, of coldness of the extremities, and of tremor; and they are apathetic, indisposed to activity, and depressed, and suffer from profound lassitude, physical and moral. Physical examination discloses, in addition to hypertrophy of spleen and liver, pronounced hypertrophy of the heart. On auscultation the heart-sounds are feeble and irregular, and the pulse frequent; often, instead of a systolic bruit at the apex, a murmur may be heard following the muffled second sound. These signs are attributed to a myocarditis, which, in turn, is made responible for the symptoms of the malarial cachexia. From this point of view treatment has been directed to the heart, diuretic medication being systematically employed. In those who can tolerate it an absolute milk diet yields excellent results. Often, however, solid food must be allowed. If the heart is feeble or arrhythmic a dose of fifteen drops of a $\frac{1}{10}$ per cent. solution of crystallised digitalin is given at the beginning, followed by oxymel of squill and the salts of potassium. Each morning for ten or twelve days the patient takes, besides, a sixth of a grain of calomel. Under this plan of treatment the excretion of urine increases, the œdema disappears, the colour brightens, the action of the heart improves, and in the course of from two to six weeks the patients are free of their cachexia, and prepared for the treatment of their chronic malarial infection with arsenic, phosphates, hydrotherapy, &c. (Medical News, October 24, 1896.)

MEDICINES, ABSORPTION OF.

Bersonow has lately been experimenting with various drugs in the hope of discovering a vehicle or adjunct that will hasten the ready absorption of a drug when introduced into the

stomach. His observations have mostly been confined to healthy organs, and the drugs generally used were potassium iodide and salicylate of soda. The absorption of either of these drugs took place rapidly in the empty stomach; 30 or 50 per cent. of alcohol hastened the operation; when more concentrated alcohol (65 per cent.) was used, absorption was retarded. A 10 per cent. solution of cane sugar acted as weak alcohol in hastening the absorption. Mucoid bodies, such as mucilage, gum arabic, &c., greatly reduced the absorption, while amylum bodies in the form of decoctions of sago, starch, &c., were as dilatory as the mucoid bodies. From these experiments we are taught to use weak solutions of alcohol and sugar in preference to gums or starchy vehicles. (Medical Press and Circular, September 9, 1896.)

ŒDEMA, BLUE.

By Alekoff (*Archives de Neurologie*, May, 1896.) This condition was first described and named by Charcot in 1889. It occurs mostly in association with hysterical forms of paralysis, and is characterised by suddenness of onset and local lowering of temperature, which may even precede its appearance. Usually the œdema affects only a single limb, and it is always situated at its extremity. Its duration is variable—sometimes it persists for several years, sometimes it occurs periodically, and sometimes it can be made to disappear and reappear at will by hypnotism. The majority of authors agree that there is vascular spasm, but the writer thinks that the venous stagnation induced by the absence of muscular action due to paralysis plays an important part. (Abstract in Glasgow Medical Journal, June, 1896.)

OYSTER CULTURE IN RELATION TO DISEASE.

Summing up the results so far ascertained, Dr. Thorne says the results of Dr. Klein's investigations which bear more immediately on the culture of oysters would appear to be as follows:—(1) The cholera vibrio, and still more the typhoid bacillus, are difficult of demonstration in sewage known to have received them. (2) Both these organisms may persist in sea-water tanks for two or more weeks, the typhoid bacillus retaining its characteristics unimpaired, whilst the cholera vibrio tends to lose them. (3) Oysters from sources which appeared to be free from risk of sewage contamination exhibited none of the bacteria, specific or otherwise, which are commonly regarded as being concerned with sewage. (4) Oysters from a few out of numerous batches derived from sources where they did appear to be exposed to risk of sewage contamination were found to exhibit colon bacilli, a circumstance which, notwithstanding the comparative universality of this intestinal organism may be regarded as having some

significance by reason of the absence of this bacillus from oysters which appeared to have been exposed to no such risk. (5) In one case where the circumstances were especially suspicious, Eberth's typhoid bacillus was found in the mingled body and liquor of the oyster. (From Second Notice of Local Government Report in the British Medical Journal, December 5, 1896.)

PELLOTIN.

Jolly (*Deut. med. Woch.*, June 11, 1896) describes his investigations into the use of pellotin as a hypnotic agent. Unlike most of the new hypnotics, pellotin is not a synthesised preparation, but is an alkaloid obtained from a plant. Frogs and mammals are thrown into a state of drowsiness by it, and later increased reflex action and tetanus are observed. The author has tried pellotin in 40 cases, when it was administered both by the mouth and also subcutaneously. They were mostly cases of severe pain, such as occurs in locomotor ataxia and in peripheral neuritis. The author gives short details of some illustrative cases. The pains of the tabetic returned when the effects of pellotin passed off, there being only a single exception to this. Pellotin, therefore, has not the analgesic action of morphine. The author has also used it in cases of mental excitement, and especially in alcoholic delirium. In a case of cerebral tumour with severe headache, pellotin produced the same quietening effect as morphine, along with a marked slowing of the pulse. In 20 cases the drug was administered in the evening. The action of 2 cg. was slight, but 4·5 to 6 cg. produced a hypnotic effect; 6 cg. had much the same action as 1 g. of trional or 1½ g. to 2 g. of chloral hydrate. A few patients complained of noises in the head and vertigo, but there were no other unpleasant symptoms. From a small number of cases it is impossible to draw conclusions, but the author is of opinion that pellotin is well worthy further trial. It is very convenient to be able to administer it subcutaneously. (British Medical Journal Epitome, July 4, 1896, par. 11.)

PHONENDOSCOPE.

Egger (*Münch. med. Woch.*, November 10, 1896) has made investigations concerning the use of Bianchi's phonendoscope. Bianchi contended that with this stethoscope no vibrations are lost, while the sounds are not exaggerated as by the microphone. The phonendoscope is not only of service in mere auscultation, but the outline of the organs can be mapped out by its help. The author's experience is not so favourable as that of Bianchi. A number of extra sounds are liable to be produced which are troublesome, such as that made by the shaking of the tubes or

by the slightest touch of the ebonite plate or metallic case. The heart sounds are heard with greater loudness and over a more extended area than with the ordinary stethoscope, but when only one tube is used the limit is the same for the phonendoscope as for the hollow stethoscope. The increase in the sounds is useful for those who are deaf, but it is doubtful whether it is of any advantage to those with the ordinary acuteness of hearing. The hearing of the heart sounds over the apices of the lungs is undesirable. Bronchial breathing and some moist sounds are not intensified by the phonendoscope. Sometimes the metallic clang is not transmitted by this instrument. Some overtones are conducted badly or not at all by it. A difference thus exists in the transmission of certain sounds. The author then relates his experiments to show that deep tones are intensified by the phonendoscope, whereas the higher tones are weakened or not heard at all. This explains the disappearance of metallic sounds and the higher tympanitic sounds. Rhonchi are intensified, but consonating *râles* are weakened. By the difference in the number of vibrations the author explains how vesicular breathing is relatively well heard, whereas bronchial breathing is heard with varying distinctness. Bianchi's contention, that the *timbre* of the sounds is not altered, is incorrect. Moist sounds produced immediately beneath the chest wall may appear metallic, and the author relates experiments to explain this. Thus in auscultation the sounds may be altered in two directions:—(1) The metallic clang may be lost; or (2) sounds may appear metallic which are not really so. Murmurs may also be altered in their intensity, being sometimes intensified and sometimes weakened. The phonendoscope may be useful in differentiating murmurs in complicated valvular lesions and in distinguishing between endopericardial and pericardial sounds. The author is sceptical as to whether organs can be correctly mapped out with its assistance. The convenience with which the instrument can be used, and the fact that several people can listen at the same time, are advantages; but notwithstanding this the author does not think it can replace the ordinary stethoscopes. (British Medical Journal, December 5, 1896, par. 454.)

PURPURA, CASE OF FULMINANT.

Pucci (*Gazz. degli ospedali e delle clin.—Centralblatt fur innere Medicin*, 1896, xvii., No. 21) reports this case:—A boy, 7 years of age, contracted measles, which were complicated by a suppurative parotiditis dextra, which was evacuated on the thirteenth day, discharging healthy pus, and reducing the fever. Two days later there followed an attack of epistaxis, rise of temperature, hemorrhages from mouth, rectum and bladder. On the following

day his whole body was covered with purpuric spots, confluent in part, accompanied by pains in the limbs, apathetic condition, with a temperature of 39° C., pulse 120, extreme anæmia and enlarged spleen. In spite of medication with liquor ferri, ergot and gallic acid, he died forty-eight hours after the appearance of the ecchymotic spots. Pucci notes that this case is somewhat different from Henoch's purpura fulminans; in the latter cases there was an absence of hemorrhages into the mucous membranes, while Jackson had repeatedly noticed them in purpura fulminans. Sections and bacteriological examination are missing for the completeness of history. (Pediatrics, September 1, 1896.)

RHEUMATISM, ACUTE.—Serum Treatment of.

Dr. Jules Weiss has treated ten patients by injecting the serum obtained by bleeding patients who had recently undergone an attack of acute articular rheumatism. His conclusions can be stated only in a general way, because reaction from the injection was variable, not only for each patient, but even for each injection. This treatment cannot be said to have a specific therapeutic value, because, for all that in some cases the cure followed two or three injections of serum, in others—in fact, in the majority—it was necessary to resort to the use of salicylates. Twenty-two injections were administered. In nine cases there was an amelioration of the swelling and pain. Twice there were both subjective and objective relief at the end of three hours. In others this appeared only at the second day. In five cases there was no relief until after the second day. In six the morbid process was not at all modified, while in three there was a distinct aggravation. The quantity of serum which was injected varied from 1½ to 2½ drachms. In two cases only were 4½ to 5 drachms used. In the three cases last mentioned an articular rheumatism of a torpid type became, after the injection, an acute polyarthritis of an inflammatory type. For comparison, in two cases of polyarthritis, injections of somatose, which contains 84 to 86 per cent. of albumose, were employed. One received three and the other two injections. These injections were followed by an immediate modification of the articular process, namely, diminution of swelling and pain. This, however, was but temporary.—*Revue de Thérapeutique*, 1896, No. 11, p. 325. (American Journal of Medical Science, October, 1896.)

Rheumatism, Acute.—Nature and Treatment.

The microbic theory of acute rheumatism is also adopted by Sir Willoughby Wade, who in a recent paper (*Brit. Med. Journ.*, 1895, i., p. 829) discusses the relationship of tonsillitis to rheumatism, a relationship which has attracted considerable

attention of recent years. The firm hold which the infective theory has taken on the Continent is well shown by the fact that Dr. Julius Weiss (*Centralblatt für innere Medicin*, 1896, p. 417) has attempted to employ the serum treatment in acute rheumatism. The serum employed was obtained by venesection from patients who had recently passed through an acute articular attack. This was administered by injection to 10 patients with distinct swelling and redness of joints and a considerable amount of febrile disturbance. He is unable to claim a specific curative action for the serum treatment, although in some instances recovery was very rapid after the injections. In the majority of instances, owing to the failure of repeated injections, it was necessary to have recourse to the salicylates. The quantity of serum injected varied, as a rule, from 6 to 10 grammes, but in 2 cases 18 and 20 grammes, respectively, were administered. (From Dr. A. E. Garrod's summary in the Practitioner, September, 1896.)

RHEUMATOID ARTHRITIS, BACTERIOLOGY OF.

Drs. Bannatyne, Wohlmann, and Blaxall (*Lancet*, 1896, i, p. 1,120) state that they were led to search for a specific microbe by the resemblances of the clinical features of the disease to some maladies of proved microbic origin, such as tubercle ; but it will, I feel sure, appear to many who have studied this malady that there is little in its clinical features to suggest such an origin. They state that, after much fruitless search, they were ultimately rewarded by the discovery of what they regard as a distinctive microbe in the synovial fluid from rheumatoid joints. The method employed was as follows :—A drop of the fluid, removed with aseptic precautions, was stained in thin film upon a cover-slip, and tubes were inoculated at the bedside. The organisms could be stained either with fuchsin or methylene blue ; but Gram's method failed entirely to stain them. Eventually Dr. Blaxall was requested to examine into the subject, and he confirmed the above-mentioned results, and eventually succeeded in obtaining cultures of the organism. The organism described is a short bacillus of dumb-bell shape, which, owing to the more ready staining of the poles, is apt to have the appearance of a diplo-bacillus. (From Dr. A. E. Garrod's review in the Practitioner, September, 1896.)

RHINOSCLEROMA.—Serum Treatment of.

Vymola exhibited a case of rhinoscleroma to the meeting from Prof. Kaufmann's wards, showing the result obtained by the treatment with "rhino-sclerine," which had been recommended by Houl, of the Pathological Institute. The case was a chronic one, dating as far back as 1886. In 1892 he was admitted to

hospital with a hard cartilaginous nose of great size. At this time a surgical interference was undertaken for the purpose of opening the nasal canals and improving the breathing, as well as the cosmetic appearance. The patient was subsequently treated with chromic acid for two months, and afterwards he was dismissed from hospital quite cured. The disease appears to have remained quiescent till October, 1895, when the upper lip began to swell, and became painful. The nasal cavities then became contracted, the right bleeding periodically. He was admitted into the hospital for a second time on February 6, 1896, with the nose in a similar condition to that on his first visit. A part was excised and bacteriologically examined with the usual results. On March 4 the treatment with "rhino-sclerine" was commenced with one cubic centimetre doses. There was no rise of temperature. On March 31 the dose was increased to four cubic centimetres, after which the temperature rose to 38·2° Cent. (100·76° Fahr.). In a control patient there was no elevation with two cubic centimetres. On May 17 the dose was advanced to five cubic centimetres, when the temperature again rose to 38·7° Cent., while the control experiment was increased to four cc. without any noticeable change of temperature. On June 2 the dose was increased to six cc., with a further advance in the temperature to 39·7° Cent. The patient received in all 73·5 cc. of the drug with marked improvement in the whole organ. The thickening and infiltration of the lips and nose had almost subsided, while the breathing was quite free. Honl said the surgical treatment of rhinoscleroma by surgical methods was as futile in this disease as in all other bacteriological processes where the local conditions recur. It is to Pawlouski that we are indebted for the first efforts in treating rhinoscleroma bacteriologically. The preparation of the drug is complicated. At first he injected subcutaneously an extract of the rhinoscleroma bacillus with apparent success. Honl himself uses the toxine of the rhinoscleroma bacillus, as in the case described. The injected fluid is of a bright, clear, orange colour, which is first experimentally tested on animals. (Medical Press and Circular, August 12, 1896.)

ROENTGEN RAYS IN THE DIAGNOSIS OF ARTERIO-SCLEROSIS.

One of the possible uses of the new discovery will be help in the diagnosis of arterial degenerative lesions. Hoppe-Seyler (*Münch. med. Woch.*, April 7, 1896) has obtained by means of the "X" rays, two photographs showing clearly certain vessels affected with sclerous degeneration. One of these was a leg amputated for fibro-sarcoma, the arteries of which were found greatly calcified during the operation. In this case the Roentgen rays

were made to pass for more than an hour through the mass of muscles of the calf in such a way that these radiations in traversing the interosseous space from behind forward had to meet in their passage the two tibial arteries without being intercepted by the bone. On the negative proof thus obtained the bones of the leg were represented by two clear bands of unequal size separated by a zone of deeper colour, the interosseous space. Near the latter were seen two well-defined streaky lines, one of which after a short course disappeared under the tibia; these were evidently the anterior and posterior tibial arteries sclerosed. On the positive proof, the lines in question were dark at the periphery and clear in the centre; they were more or less wavy. Besides the numerous flexures, there were seen along their course spots larger and darker in colour, due to greater thickness at these points of the deposit of calcareous matter. The second photograph was obtained by exposure to the "X" rays for half-an-hour of the hand of a living subject, aged 64 years, in whom the radial and brachial arteries, as well as those of the head and feet, were very sinuous and manifestly hard to the touch. In this case the negative proof presented along the internal border of the fifth metacarpus a coarse line as large as a knitting-needle and almost as clear as the bone itself. On the positive proof this line was dark at the periphery and more clear in the centre, and corresponded evidently to a branch of the ulnar artery affected with sclerosis. Another similar streak corresponding to a vessel was seen farther down toward the wrist, crossing one of the carpal and soon lost between the last two metacarpal bones. (Boston Medical and Surgical Journal, May 28, 1896.)

ROENTGEN RAYS IN THE DIAGNOSIS OF RHEUMATOID ARTHRITIS.

The extremely interesting discovery of Professor Roentgen promises to be of as valuable service in the study of joint diseases as in other branches of medicine and surgery. Not much is as yet known as to the limits of the usefulness of the "X" rays in this direction. Photographs taken by their means of the hands of people suffering from rheumatoid arthritis clearly show the osteophytic outgrowths around the diseased joints; whereas in cases of fusiform enlargement, which more or less closely simulate rheumatoid arthritis, but in which the soft structures are alone involved, the shadow photograph reveals at once the absence of any implication of the bony structures. The tophaceous deposits of sodium biurate, which produce such conspicuous deformities in the hands of some sufferers from chronic gout, appear to be far more transparent to the "X" rays than the bony structures are, and

are therefore not at all likely to entail any difficulty in the interpretation of the observed appearances. (From Dr. A. E. Garrod's Review in the Practitioner, September, 1896.)

SCARLET FEVER.—Antistreptococcus Serum in.

Baginsky (*Berliner klinische Wochenschrift*, 1896, No. 16, p. 340) reports the results secured in 48 cases of scarlatina between October, 1895, and March, 1896, in the course of which the antistreptococcus serum of Marmorek was employed. In 27 the course of the disease was unusually favourable, the majority recovering without complication. Only 4 were attended with suppurative otitis; 1 with mild nephritis; in 2 others severe anginas developed; in 1 case acute and painful glandular enlargement followed the injection, but recovery ultimately ensued. A striking feature in all was the rapid reduction of the temperature. It was further remarkable that in only 2 cases did severe anginal symptoms appear in the course of treatment with the injections. Ten cases in which such symptoms were present on admission terminated in speedy recovery. In exceptional cases albuminuria appeared, and in a single case nephritis with tube-casts, blood-corpuscles, &c. In a second group of cases of severe type the results were not so happy, although it is possible that in these the amount of serum employed was insufficient. It appeared, however, as though the cases were refractory to the therapeusis. In a third group of cases, 5 in number, the serum was employed only for the relief of complications arising late in the progress of the disease. In 4 of these cases the results were satisfactory; in 1, complicated by ulcerative endocarditis, death ensued. Among the whole number of cases there were 7 deaths, 14·6 per cent., as compared with percentages fluctuating between 22·6 and 34·4 in the years from 1890 to 1895. The mortality among cases treated with other means during the same epidemic as that in which the serum was employed was 24·9 per cent. The secondary manifestations attending the injections were similar to those observed in the sequence of injections of diphtheria antitoxin. (Medical News, June 27, 1896.)

Scarlet Fever.—The Angina of.

L. Hain (*Przeglad lebarski*, 1895, No. 38—*Centralbl. f. innere Medicin*, vol. 17, No. 21) divides scarlatinal sore throat into two varieties:—Angina catarrhalis and angina necrotica, falsely termed diphtheria scarlatinosa. The latter is distinguished from true diphtheria (1) by its predilection for the tonsils, the bands of the uvula, and the palatal arches; the larynx and trachea show no changes. (2) The necrotic form of angina is never followed by paralysis; and (3) Lœffler bacilli are never

found in this necrotic form. To prove bacteriologically these differences, the author very carefully subjected 20 cases of angina scarlatinosa to bacteriological investigation, and the following results were obtained :—(1) In cases of scarlet fever with angina catarrhalis usually the staphylococci are found, seldom streptococci. (2) In cases of scarlet fever with angina necrotica, besides the staphylococci, there were found very numerous streptococci. We must, therefore, discriminate between two kinds of infection, (*a*) those with a preponderance of one variety of bacteria, usually a staphylococci infection, while other forms of bacteria are not at all found, or their number is so small as to be ignored. (*b*) A mixed infection, where, besides staphylococci, there are also found quite numerously streptococci. The necrotic form of the scarlatinal angina, being a mixed infection, is also the more severe form, and both its course and death-rate (25 per cent.) justify this view. For the lethal consequences the author mainly holds the streptococci responsible, as experience teaches us in diphtheria. Roux and Martin injected antitoxins into animals which had first been treated with both Lœffler and streptococci cultures. The course of diphtheria was a very severe one in these cases, and in spite of the antitoxin injections the animals died. Although, as yet, a specific scarlet fever bacillus is unknown, still there may be drawn a positive conclusion as to the course of a certain case of scarlet fever by making a bacteriological culture of the accompanying angina, the earliest symptom of the disease. (Pediatrics, September 1, 1896.)

SCARLET FEVER, RELAPSE IN.

The question of relapse in infectious fevers, although universally admitted in typhoid, has not been the subject of much attention in scarlatina. Griffith (*Quarterly Med. Jour.*, October, 1895) found, in 2,000 cases admitted for scarlatina to the Bagthorpe Fever Hospital, that 14 suffered from second attacks whilst actually under observation. In these cases, the second attack was marked by a rash, lasting from one to four days, sore throat and fever. Comby (*Semaine Méd.*, 1896, No. 30) relates briefly 2 cases of relapse in children of four and six years. In the first case a scarlatinal rash appeared during the period of desquamation; in the second, on the fourteenth day of a normal case, fever and rash appeared. In estimating the frequency of relapse several sources of error are present. An erythematous rash is common in such complications as nephritis or tonsillitis. Rendu interprets the rash as a streptococcus manifestation, and states that a pultaceous angina is always present, proving a source of secondary infection. Such erythemas, however, pass off rapidly, and may be excluded in the cases observed by

Griffith. The question as to whether the second attack is an auto-infection or due to a second infection from neighbouring cases is referred to by Griffith. If the latter supposition is correct, it would be an argument against placing large numbers of cases in a ward. Griffith's supposition that a mild case of scarlatina may contract a second attack from contact with a virulent type of the disease hardly seems to be warranted, and it would seem an unnecessary refinement to classify different types of the disease in different wards as suggested by this writer. (Dr. F. G. Finley's abstract in the Montreal Medical Journal, September, 1896.)

SCURVY IN BOTTLE-FED CHILDREN.

Let us summarise briefly the common symptoms of the disease as we find them in the class of cases under consideration:—The baby has a worn and fretful look, a bloodless and often muddy skin; its eyes may be bulging, with ecchymotic patches in the upper lids, or there may be ecchymosis without the prominent eye; the child is peevish and often screams at your approach; the breath is foul; the gums are swollen, tender, and often ecchymotic—they extend down upon the teeth, and bleed easily when touched; the tongue is covered with a dirty yellowish-brown coat; there is general muscular tenderness; the spine is often painful or sensitive to touch; the child is disinclined to sit up without support, and moves as if in pain; the thighs are swollen, very tender, and often have a shining appearance; there is often thickening of the lower end of the femur; sensation is acute, but muscular power is weak; there may be immobility of the lower limbs amounting almost to paralysis; there is tendency towards easy fracture of the femur, the break occurring near the epiphysis. There is sometimes general purpura; indeed, these purpuric spots may be your first intimation of the constitutional vice lying back of them. (From Dr. Garber's paper, Pediatrics, June 1, 1896.)

SERUM, ARTIFICIAL, IN INFECTIOUS DISEASES.

In an article in *La Presse Médicale*, June 3, 1896, Bosc discusses the merits of intravenous injections of artificial blood serum in infectious diseases and toxic conditions. The fluid employed contained sodium chloride 7 grammes, and sodium sulphate 8 grammes, to 1,000 grammes of distilled water. It was sterilised by boiling, and injected into a vein at a temperature of 38° to 39° C. Before injection about 8 ounces of blood were drawn, and then 2 litres of the serum were injected slowly into a vein during fifteen or twenty minutes. In cholera patients, the effects were striking. Thus a patient who was pale, cyanotic, rigid, voiceless, with a scarcely perceptible pulse, was

transformed before the injection was finished. The cyanosis and clamminess disappeared, and the pulse became of good volume at 105. "It was as if a corpse was coming back to life." The injections were followed almost invariably by a chill and high fever up to 40° C. (104° F.), often accompanied by vomiting and diarrhœa. These symptoms subsided in a few hours, and on the following day there was a decided improvement in the general condition which concluded in a speedy recovery. Bosc has had no personal experience with this treatment in typhoid fever and septicæmia, but from what he knows of the results others have obtained, he looks for great benefit from its use in these diseases.—(Medical News, August 8, 1896.)

SERUM TREATMENT OF DIPHTHERIA.

After hearing and discussing the report (epitomised at page 132), the American Pediatric Society decided to embody its conclusions in the following resolutions :—(1) *Dosage.*—For a child over two years old the dosage of antitoxin should be in all laryngeal cases with stenosis, and in all other severe cases, 1,500 to 2,000 units for the first injection, to be repeated in from eighteen to twenty-four hours if there is no improvement; a third dose after a similar interval if necessary. For severe cases in children under two years, and for mild cases over that age, the initial dose should be 1,000 units, to be repeated as above if necessary ; a second dose is not usually required. The dosage should always be estimated in antitoxin units, and not of the amount of serum. (2) *Quality of Antitoxin.*—The most concentrated strength of an absolutely reliable preparation. (3) *Time of Administration.*—Antitoxin should be administered as early as possible on a clinical diagnosis, not waiting for a bacteriological culture. However late the first observation is made, an injection should be given unless the progress of the case is favourable and satisfactory. (Montreal Medical Journal, July, 1896.)

SPLENIC ANÆMIA.

The term splenic anæmia has recently been introduced, not merely to indicate mere anæmia with enlarged spleen, but to designate a peculiar and still obscure condition in which, among other symptoms, there is more or less pronounced anæmia and an enlarged spleen, the distinguishing feature of this particular disease being the absence of anything approaching leucocytosis. Splenic anæmia, properly so-called, commences insidiously with gradually increasing weakness, associated with occasional pains in the splenic region. Later, the anæmia usually becomes more marked, and the enlargement of the spleen becomes a very prominent feature of the case. Ultimately, and usually within

a year or so, the patient reaches a final stage of cachexia culminating in death. Such cases are rare, and do not generally come under observation until the second stage has been reached. The patient then presents marked anæmia with an extremely enlarged spleen, the temperature is raised, the pyrexia being of the continuous type. As the disease progresses a marked tendency to hemorrhage is developed. Under the microscope the number of red corpuscles is seen to steadily diminish, and the hæmoglobin value of the blood falls in a corresponding ratio. The difficulty of establishing an absolutely certain diagnosis is considerable, because it has not only to be distinguished from the maladies already referred to, but also from malarial and syphilitic affections of the viscera. The disease is stated to occur at any age, but to be commonest in adults and in males. It is, however, doubtful whether the pathology is the same in children as in adults, for in the former a certain amount of leucocytosis is the rule. The only treatment that appears to render any service is arsenic, but, judging from the published reports of cases, the benefit is very limited. In a few cases in which splenectomy has been resorted to the greatest relief has followed the operation, and the patients have survived, in some instances, for years. In leucocythæmia removal of the spleen has proved almost invariably fatal, hence the importance of making sure of the diagnosis before resorting to so radical a measure. It is worthy of note that in a case related by Dr. Coupland great improvement followed splenectomy performed by Mr. Gould in spite of the fact, discovered at the autopsy two years later, that the case was not of the kind suspected. (From a leading article in the Medical Press and Circular, June 24, 1896.)

SYPHILIS.—Treatment in Private Practice.

Inunctions are good for severe cases, such as those of obstinate headaches, rheumatism, iritis, &c., and where the salts of mercury cannot be well borne when given internally. Patients usually object to them, however, as they are unclean and irritate the skin. From 20 to 60 grains may be used at each treatment, and should be rubbed in as follows:—The first day, on the inner side of the legs; the second day, on the inner side of the thighs; the third day, in the iliac regions; the fourth day, over the sides of the chest; the fifth day, over the inside of the upper arms; the sixth day, over the flexor surfaces of the forearms; the seventh day, rest. These should be taken at night before retiring. If they prove to be irritating, a bland ointment may be applied after each inunction. Woollen underclothing should be worn during a course of inunctions. Symptoms of salivation should be carefully watched for during

this treatment, as it is liable to come on very suddenly. An interesting fact concerning the giving of inunctions in an institution is that the attendant, or rubber, in these establishments, whose hands are constantly in contact with the ointment, seldom has symptoms of salivation. Kaposi considers inunctions the best method of treatment. He says that the mercury penetrates into the subcutaneous tissue, where it is transformed into soluble albuminoids, and, coming into contact with the specific virus, destroys its power. From thirty to forty inunctions are usually sufficient to relieve severe symptoms, but if not, they should be continued until these have abated. (New York Medical Journal, June 20, 1896, p. 806.)

SYPHILIS FROM AN INSURANCE POINT OF VIEW.

Dr. P. H. Maclaren (*Edinburgh Medical Journal*, March, 1896), in considering this subject without reference to general mortality statistics, from which it is difficult to obtain accurate information, states that he is inclined to classify for insurance purposes all syphilitics under the three following groups:—(1) If a man has been properly treated the probabilities are that, provided he is of good constitution and habits, no complications will arise, and the expectation would be that he will go through life with scarcely more appreciable risk than one who has never had the disease. (2) If proposer had not undergone a sufficient course of treatment, and applies for insurance before the expiration of six years, the period at which the disease normally terminates, and yet is not suffering from any tertiary manifestations, and is otherwise satisfactory, the chances are that he may escape the malign form, but 10 per cent. extra should be charged until the expiration of the six years, and the case then reconsidered. (3) When tertiary symptoms have developed the proposal should be absolutely declined, because, while treatment may temporarily remove these, it cannot eradicate the tendency to recurrence; and clinical observation has shown that those so affected rarely live beyond a term of ten years, and often much less when palliative treatment is not carried out. While his personal experience is almost absolutely favourable regarding the prognosis of the cases included in Class 1, it is questionable when the cases are looked at, with the interests of the offices perfectly safeguarded, if they should not practically be treated in the same way as those in Class 2. (Medical Record, August 1, 1896.)

SYRINGES STERILISED BY BOILING.

(Hofmeister, *Centrblt. f. Chir.*, July 4, 1896).—The author claims to have discovered a simple and effective method for

the sterilisation of ordinary syringes by means of boiling. It depends on the fact that ordinary leather which has been placed for 24—48 hours into a 2—4 per cent. solution of formalin, can be boiled without losing its toughness, softness, or flexibility. The author has boiled leather so treated for ten hours continuously without detriment, whilst leather not so treated becomes soft and rotten on boiling, and on drying is converted into hard, stony mass, which can be powdered. His procedure is as follows:—(1) Only syringes composed of glass, metal, and leather can be treated in this way, *i.e.*, instruments in which shellac or other substances soluble in boiling water are not used for fixing the glass barrel to the metal frame. (2) The piston is removed, and cleansed from fatty matters with ether. (3) It is then placed for 24—48 hours into 2—4 per cent. solution of formalin. (4) Afterwards it is well washed, and the syringe is put together again, and is ready for boiling. (5) All air is expelled from the barrel by moving the piston up and down under water. (6) The treating with formalin has to be repeated from time to time; but one soaking may be sufficient for several boilings. (Dr. Altmann's abstract, Australasian Medical Gazette, October 20, 1896.)

TETANUS.—Antitoxin Treatment of.

The new tetanus antitoxin (as prepared by Behring) is now available for the medical profession, and has been administered to a patient suffering from tetanus in the Hospital of the Holy Spirit in Frankfort. Dr. Willemer, physician to this hospital, reports the case as follows:—A man, 23 years of age, caught cold on September 19, and four days afterwards observed a stiffness of his neck, which was soon followed by a tonic contraction of the muscles of the trunk. On the night of September 29 clonic convulsions of the masseter muscles developed, and on September 30 he was brought to the hospital. No injury which might have caused the tetanic symptoms was discovered; well-marked opisthotonos and stiffness of the muscles of the chest and the abdomen existed, but the lower extremities were but slightly involved. Trismus was not very obvious, for the patient could open his mouth fairly well, but swallowing was very difficult. The patient's temperature was 37·1° C. (98·8° F.). His pulse was 88, and his blood pressure 140 millimetres (five and a half inches) of mercury. On the following day the symptoms were worse, several clonic convulsions occurred, and trismus supervened. On October 1 an injection of 5 grammes of antitoxin dissolved in 50 grammes of water was given. In the evening the patient said that he felt much better, and next day the clonic convulsions were less severe; but on the 3rd all the symptoms became as bad as ever,

and 4 grammes were injected again on the 6th, after which date a conspicuous improvement took place. On the 7th the stiffness of the pectoral and abdominal muscles had decreased. On the 8th the opisthotonos was less developed; the legs could be for the first time slightly moved. On the 12th the patient was able to sit up in bed; on the 17th he could walk; and on the 23rd he was allowed to go home. Dr. Willemer points out that the case was rather severe, and that the first injection produced only a temporary effect, but the second one was very successful. Perhaps the amount first injected was not large enough, especially as the patient had already been ill nine days. The antitoxin was injected into the subcutaneous tissue and not into a vein. (The Lancet, November 28, 1896.)

TRIONAL AND SULPHONAL.

Von Mering has been conducting extensive experiments with trional upon man and the lower animals. His report, together with abstracts of the clinical results obtained with trional by sixteen other professors, in as many different cities, is published in the *Therapeut. Monatshefte*, August, 1896. Von Mering himself administered it in almost 1,000 instances. In some cases the patient took from 15 to 25 grains every second or third day for three or four months, without experiencing any discomfort. The testimony of the other sixteen professors was similar to his own. All stated that it was a more powerful hypnotic than sulphonal, and free from the unpleasant symptoms which sometimes follow the ingestion of sulphonal. Experience has proved that it is rarely necessary to give more than 15 grains of trional—at most 20 grains—in cases of uncomplicated sleeplessness. A feeling of drowsiness on the following day is proof that too much was given. In cases of sleeplessness due to pain, it works very well in combination with $\frac{1}{10}$ grain of morphine. If, for any reason, it is necessary to give a hypnotic daily for a long time, it is advisable to change the medicine from time to time, substituting occasionally for the trional, amyl hydrate, chloral hydrate, or chloralamid. (Medical News, November 7, 1896.)

TRIONAL, COMPARATIVE SAFETY OF, AS A HYPNOTIC.

Beyer (*Deut. med. Woch.*, 1896, No. 1; *Fortschritte der Medecin*, October 15, 1896) remarks that, in spite of the widespread employment of trional, only 6 cases of poisoning with that drug are known. One was an instance of acute poisoning; more than 105 grains were taken at a single dose, with suicidal intent, but the person survived. Of the cases of chronic trional poisoning, only 1, Hecker's, can be accepted as purely the

result of taking the medicine. The patient recovered after discontinuing the use of the trional, which he has taken in daily amounts of 22 grains for thirty-six consecutive days. It may, therefore, be said that trional is one of the best hypnotics, if not quite the best, for unpleasant effects are readily avoided if it is used properly. (New York Medical Journal, November 7, 1896.)

TYPHOID FEVER.—Serum Diagnosis of.

Widal and others in France discovered that these specific substances were present regularly in the blood of typhoid patients as early as the seventh day, and sometimes earlier. They found that if to a drop of blood serum, or to a drop of water containing a solution of dried blood from a typhoid patient, a moderate number of typhoid bacilli were added, a very peculiar reaction occurred, which was readily observed under the microscope. The typhoid bacilli were found to gather themselves in clumps and, thus entangled, to cease their former active movements. As a rule this took place within five minutes, and always within a few hours. With no other blood than that from those who have suffered from, or are suffering from, typhoid fever will the typhoid bacilli give this reaction. Johnston, of Montreal, has further simplified the technique. The blood is obtained upon a clear glass slide from a needle-prick of the ear or finger of the suspected case. It is allowed to dry, and thus sent or carried to the laboratory. It will give this reaction even after having been kept for several days. At the laboratory a loop of a bouillon-culture of absolutely reliable typhoid bacilli is placed upon a clean cover-glass, and to this is added a large loopful of a watery solution of the dried blood-specimen. The cover-glass is now inverted over the concavity of a hollow slide and sealed at the edges with melted vaseline. Under the microscope, with a high-power dry-lens, or with a one-twelfth oil-immersion, the rapid clumping of tbe bacilli in the hanging drop can be observed. (From Dr. Wm. H. Park's leading article in the Medical News, November 14, 1896.)

Typhoid Fever.—The Course of.

In a study of the evolution of typhoid fever by Bernheim, of France, some light is thrown on the cause of the irregular course and varying symptom complex of this disease. Bernheim says that the so-called normal type of typhoid, such as described by Wunderlich (period of augmentation of three to four days; stationary period, twelfth to fourteenth day; and period of decline, five to six days), is not the most common. While this may be retained as a schema, alongside of it should be mentioned typhoid with shortening of the stationary period, or abortive

typhoid; and typhoid with prolongation of the stationary period, or prolonged typhoid. In the first the microbic evolution is aborted, and the lesions in Peyer's patches resolve without ulceration. In the second the microbic evolution is not continuous, but occurs by steps. Pathological anatomy shows that the lesions are not all contemporaneous, some being in a state of ulceration or cicatrisation, while others are in the stage of hyperplasia. According to whether the first microbic evolution is only in a state of regression, or whether convalescence has actually begun when a second evolution sets in, would he call it a recrudescence or a relapse. In both instances, however, the cause is the same—successive evolutions of the typhoid germs. He found relapses in one-fourth of the cases, and, adding together the cases with recrudescence and those with relapse, the number amounted to one-third of the whole. The recurrences may be abortive, but at other times they are long continued and grave. The persistence of the typhoid bacillus in the economy for several months after convalescence, as shown by Orloff, Dupré, and others, goes to confirm this view, based on the clinical history. The relapses may cause no other symptoms than rise of temperature, which may continue for weeks or for only a few days. An irregular fever may follow, and be due to secondary infection from staphylococci or attenuated streptococci. Hemorrhages, pneumonia, myocarditis, &c., may alter the regular course of typhoid. (From a leading article in the Medical Record, September 19, 1896.)

Typhoid Fever.—Perforation in.

Among occurrences which might be mistaken for intestinal perforation, may be mentioned the development of a localised peritonitis connected with an ulcerated Peyer's patch without perforation, the passage of a gall-stone, and the onset of an abortion. In clinical experience, I think it is in distinguishing the first of these (localised peritonitis connected with a Beyer's patch without perforation) that the real difficulty centres. Such cases, even under the most careful observation, may leave one in doubt. The symptoms very closely resemble those of a case in which a minute perforation has occurred, and in which there has been little or no escape of the intestinal contents into the peritoneal cavity. Therefore, when the symptoms are not very urgent, and the pulse is of tolerable quality, and the patient does not look collapsed, and especially when he has survived for some days, we may hope that after all the case is one of peritonitis without perforation. No doubt this also is a sufficiently alarming, a sufficiently dangerous complication, but we do not despair so much of the patient's recovery. His chances are better. The escape of the contents of a softened

mesenteric gland into the peritoneal cavity would give rise to symptoms similar to those of intestinal perforation, so similar as to render a differential diagnosis practically impossible. (From Dr. Allan's paper in the Glasgow Medical Journal, June, 1896.)

Typhoid Fever.—Prognosis of.

Hyperpyrexia is only of grave import when rebellious to ordinary cooling methods, and among these I do not include the use of cold baths. Obese and elderly patients are bad subjects for all fevers and acute diseases. The existence of chronic renal disease is incompatible with recovery from the continued fevers. Meteorism, delirium, subsultus tendinum, and tremor are always of serious import, indicating failure of nervous power. The presence of cardiac valvular disease adds largely to the danger. Carphology is, as declared by Hippocrates, commonly a fatal sign, but I have known it persist for three or four days in a bad case and good recovery follow. Early hemorrhage is unimportant. Dicrotism of the pulse often precedes late hemorrhage. This condition of the pulse signifies exhaustion and deep ulceration of the bowel. The more profuse the hemorrhage the greater the danger; mo derate hemorrhage is rarely harmful. Vomiting in the third week may be the precursor of peritonitis. Epistaxis is not serious unless profuse, when it may prove fatal. Pregnancy is always a grave complication and abortion is common. I attended one case, however, in which the patient was six months advanced in pregnancy, and she made a good recovery and had a child born at term. An abundant eruption of papules does not denote any special gravity, and, *per contra*, absence of eruption certainly affords no ground for belief that the case is a mild one. Excessive diarrhœa is unfavourable. Perspiration, apart from other severe indications of weakness, are not important. (From Sir Dyce Duckworth's Address on "Prognosis," before the British Medical Association, 1896. The Lancet, August 1, 1896.)

VARICELLA.—Incubation Period of.

(By Drs. Goodall and Washbourn.) The committee appointed some years ago by the Clinical Society to investigate, amongst other questions, the length of the incubation period of various infectious diseases, reported that the cases of varicella received by them were few in number, and not many of them would satisfy a rigid examination. Hence we are induced to publish the following cases. [The details of the 19 cases are omitted here.] From the cases it appears:—(1) That the incubation period of varicella is somewhat variable; (2) that it is never shorter than twelve days; (3) that it may be as long as

nineteen, and is commonly longer than fourteen days. (British Medical Journal, September 19, 1896.)

VARIOLA.—Immunity against Vaccination conferred by.

Dr. J. J. Matignon (*Bull. Gén. de Thér.*, 1896, p. 314) has studied this question in the north of China. One hundred and twenty-two children were vaccinated by scarification or pricking; of these, 73 were successfully and 2 doubtfully vaccinated. The average age of the children was $5\frac{11}{100}$ years; the average age at which they had been attacked by variola, $3\frac{8}{10}$ years. From these observations he concludes that in this country variola confers only a temporary immunity against vaccination; its duration varies from 7 to $9\frac{5}{10}$ years. The success of the vaccination is in proportion to the age of the child, because children here are usually attacked by variola at an early age. Success in these vaccinations is in proportion to the quantity of vaccine inoculated. Vaccination by scarification presents no real advantages over that by pricking. On the contrary, the former is more frequently followed by adenitis, because the pustules are larger and more numerous and give greater opportunity for excavation than in the latter. In these cases the pustules were true vaccinal, because their serum was successfully inoculated in newly-born children. There is no relation between the severity of an antecedent variola, judged by the cicatrices found on the face, and the vaccinal receptivity. Finally, it is necessary for Europeans living in Pekin, where the disease is endemic, who have undergone variola, to be re-vaccinated after a certain time. (American Journal of Medical Sciences, September, 1896.)

Variola.—Researches into.

The conclusions reached and suggestions made in this paper may be summarised as follows:—(1) Smallpox, cowpox and horsepox are genetically related, being different manifestations of the same infectious disease in different genera of animals (Man. Bos. Equus). (2) The specific infectious agent of variola and of vaccinia has not been demonstrated. The extended experimental investigations which have been made indicate that it does not belong to the class of micro-organisms known as bacteria. (3) Various bacteria are commonly found in the lymph from vaccine vesicles, obtained either from bovine animals or from man. Among these are the well-known pus cocci, and these micrococci are probably largely responsible for the erysipelatous inflammation and other unpleasant complications which frequently result from vaccination with such lymph. (4) Lymph preserved in glycerine after a time

becomes sterile so far as the presence of bacteria is concerned, without losing its specific virulence. (5) Immunity may be induced by subcutaneous inoculation of vaccine virus, without the development of a vaccine vesicle; and it is probable that the subcutaneous injection of lymph preserved in glycerine would give protection without any of the septic complications so common as a result of vaccination by the usual method. (6) The blood-serum of immune animals contains a substance in solution which destroys the specific virulence of vaccine virus when brought in contact with it. (7) This substance is not present in sufficient amount to make the blood-serum of immune animals available for the production of immunity in man (or for the treatment of variola?). But it may perhaps be obtained in a concentrated form by chemical methods, and in that case would be likely to prove useful, and possibly specific as a therapeutic agent in this disease. (8) The immunity resulting from the subcutaneous injection of vaccine lymph, like that resulting from vaccination in the usual manner is gradually developed and is not complete until the eighth day, depending, no doubt, upon a multiplication of the infectious agent in the body of the susceptible animal. On the other hand, the immunity resulting from the transfusion of a large amount of blood-serum from an immune animal to a susceptible animal is an immediate result of such transfusion. (From Dr. G. M. Sternberg's paper in the Journal of the American Medical Association, May 9, 1896.)

VASO-MOTOR DILATORS.—On the Dosage of Some of the.

I should like to offer some conclusions as to the use of nitro-glycerine in children. The drug appears to have no toxic effects in infants and small children, even in very large doses. It is my constant habit to prescribe 1 minim of a 1 per cent. solution to infants under the age of two years every two or three hours. I use it in place of the sweet spirits of nitre, and prescribe paraldehyde separately. Let me give an illustration from my case-book. A female infant, aged nine weeks, was seen in Sydney, on March 25, 1894, in the status epilepticus. The exact prescription was 1 grain each of the bromides of ammonium, sodium, and potassium, 3 minims of tincture of belladonna, 1 minim of solution of nitro-glycerine (1 per cent. alcoholic solution), 10 minims of glycerine, with peppermint water to 1 drachm in water every four hours. This was kept up for forty-eight hours. On April 9, 1894, the fits had returned in great severity and the same dose was repeated every three hours for another two days. This case is mentioned because the child has been seen by me at frequent

intervals up to the present day, and, so far as I know, the nitro-glycerine has done no harm. The fits have long ceased to occur. The alcoholic solution of nitro-glycerine figures largely in my prescriptions and has done so for many years past. (Mr. Angel Money, The Lancet, November 28, 1896.)

WHOOPING-COUGH.—Antipyrin in.

In the *Gazette hebdomadaire de médecine et de chirurgie* for October 22 M. Le Goff calls attention to the results obtained by many authors with this treatment. Dubousquet-Laborderie employed it in 300 cases, in which 196 patients were cured or benefited. The average duration of the treatment was 35 days. The amounts given daily varied from 5 to 15 grains for children up to 3 years of age, and from 30 to 60 grains for older children and adults. The same results were observed by Geffrier, De la Jarrige, Jasiewicz, and others. Richardière also employed antipyrin with satisfactory results. It diminished the number of coughing attacks one-third in the majority of cases, although it never suppressed them completely. In two cases in which the patients vomited profusely it had no effect on the vomiting. He concluded, however, that antipyrin exerted a positive action, but that it was not superior to that of belladonna. Whenever the renal functions are not impaired, says the author, M. Lemoine prefers this medication to any other, as its action is surer and more rapid. To small children he gives from 4 to 8 grains in enemata every 24 hours, and to children from 3 to 6 years of age and older, 24 grains in 6 doses. Von Genser enumerated the results obtained by him in 200 cases, in which he employed two methods of treatment:—Insufflations of powdered medicaments into the nasal fossæ and antipyrin administered by the stomach. With the first method few results were obtained, and the duration of the treatment was at least 43 days; in the second the results were more conclusive. Administered in quantities of 2 grains a day for each year of the child's age, antipyrin always diminished the number of coughing attacks and lessened their violence. Recovery was obtained in 24 days, and from this the author concluded that antipyrin shortened the duration of the disease. Many other instances are cited by M. Le Goff to demonstrate the efficacy of this treatment. In order to prevent any injurious action on the digestive tract the drug is given in Vichy water as follows:—℞ Antipyrin, 15 grains; gooseberry syrup, 300 grains; Vichy water, 2·5 ounces. M. This quantity is to be taken in 24 hours, a dessertspoonful after each coughing attack. Besides this, M. Le Goff recommends the ingestion of milk or bouillon after each dose of the solution, as the antipyrin is thus very well tolerated. (New York Medical Journal, November 14, 1896.)

AFFECTIONS OF THE NERVOUS SYSTEM.

APHASIA, SENSORY, AND WILL-MAKING.

In the paper read by Dr. Mantle, of Halifax, at the last meeting of the Medical Society of London, on "Sensory Aphasia," which was reported in *The Lancet* of November 28, he related the fact that one of his patients, while deaf and blind to words, as well as having complete paralysis of motor speech, expressed a wish to make his will, and made his wishes known by forming the outline of the letters on the bed-sheet with his finger. The patient made his lawyer and wife understand that when they meant "Yes" they were to squeeze his hand, and when "No" they were to tap it. To satisfy the patient the will was executed, and with his left hand he managed with difficulty to write his signature to it. Gowers remarks that, inasmuch as the testator cannot understand what is said to him, the testamentary capacity is worthless in the condition of word-deafness and blindness such as this patient had. But it seems difficult to conceive that a patient in the condition described could indicate correctly by forming letters on the sheet what his wishes were. If he did so, then he had no agraphia. And how he could sensibly indicate the somewhat involved arrangement by which "Yes" or "No" were to be expressed is very difficult to understand. Such a case, with reference to testamentary capacity, would have to be judged on full and complete evidence. Undoubtedly, as a general rule, it is true that a patient who is word-deaf and word-blind is not in a condition to understand, and, therefore, to make, a valid will. (The Lancet, December 12, 1896.)

APOPLEXY, TEMPERATURE IN.

Dr. Dana (*Post-Graduate*, vol. xi, No. 7) concludes that "when a person has an attack of hemiplegia, of a more or less typical character, the rise of temperature on the paralysed side points to a hemorrhage rather than to simple obstruction of an artery. On the other hand, when a person has a hemiplegia, and the disturbance takes the ordinary course, without any difference in the temperature of the two sides, the likelihood of the trouble being due to a softening is much greater." He has never found any perceptible temperature disturbance in hemiplegia due to embolism, no matter how pronounced and severe the central disturbance has been. In thrombosis, especially "when occurring in old people with badly diseased arteries, and a tendency to extension of the softening, there is rather more apt to be a temperature disturbance. But the tendency is much greater with hemorrhage." (From Dr. Williamson's abstract in the Medical Chronicle, November, 1896.)

BRAIN.—Dry Preparations of.

Dr. Trevelyan read a paper at the British Medical Association Meeting, 1896, on "The Various Methods of Making Dry Preparations of the Nervous System." He had chiefly employed during the last two years and a half the zinc chloride methods. With Giacomini's method good preparations can be made but time amounting to eight or nine months is required. The method mostly used in these preparations is that recommended by Laskowsky. Three solutions are required, the important one being No. 2, an alcoholic solution of zinc chloride, and No. 3, containing glycerine with boracic and carbolic acids and a small quantity of alcohol. In all methods it is very desirable previously to wash out the blood and to inject some of the hardening fluid. The membranes are stripped off after a couple of days. Dr. Trevelyan said that he had employed Stieda's method on only one occasion, the result being so unsatisfactory that it was not repeated. He had prepared some half-a-dozen brains by Fish's method but here again the shrinkage was very considerable and the colour bad. He contended that varnishing might be admitted with advantage in all cases. Formol used in a variety of ways had given disappointing results. The objects of dry methods are:—(1) To secure as little shrinkage as possible; (2) to keep a colour as nearly resembling the normal one as possible; (3) to make the preparation permanent, and (4) to complete the method in as short a time as possible. Laskowsky's method had given the author the best results. As regards permanency, the specimen could be returned for a short period to the third solution if it showed any signs of deteriorating, but as yet it had not been found necessary to resort to this in the specimens shown. Old museum specimens were available for this method. The illustrative specimens shown included normal and pathological brains and vertebral columns with cords *in situ*. Dr. Trevelyan maintained that these dry specimens might be much more extensively employed than at present for teaching purposes. (British Medical Journal, October 10, 1896.)

Brain.—Exploration of.

Dr. Edmund Sauchon, of New Orleans, La., advanced a method of exploring the brain with a needle and syringe through capillary holes drilled in the skull as a substitute for trephining. He urged the simplicity of the procedure, its comparative safety, and the ease of its application as points in its favour. By its employment many lesions, such as abscesses, hard cysts, and tumours may be readily diagnosed and located. In tumours, however, of the same consistency as the brain this method would be of no avail unless some of the particles expelled from

the needle gave some information as to the character under the microscope. The author employs a drill to which is added an adjustable guard to limit the penetration of the instrument. The punctures are made under antiseptic precautions, and when the inner table has been reached or but partially drilled through, the instrument is withdrawn. The perforation of the skull may be readily completed with the point of a No. 1 aspirating needle attached to a syringe. Several holes may be drilled at a distance from one another at the same operation. The danger of hemorrhage is but trifling according to the observations of the author on dogs and the reports of Spitza, Meinchard, Schmidt, and others. (Boston Medical and Surgical Journal, August 13, 1896.)

BRAIN, SYPHILIS OF.—Recovery under Anti-syphilitic Treatment.

Drs. M'Call Anderson and W. R. Jack record the following case in a woman, aged 37, the symptoms having begun four months previously. On admission she complained of severe pain over the vertex, and especially on the right side, where there was distinct tenderness to percussion in the vicinity of the fissure of Rolando. There was marked dimness of vision, and paresis of both sixth nerves, but especially the right. A report on the condition of the fundus, sent with her by Dr. Freeland Fergus, stated that there was marked double optic neuritis. The attacks of vomiting, from which she suffered, were cerebral in nature, being in no way affected by the taking of food. Twitchings of the left hand and the lower part of the left side of the face, as described above, were noticed. There was paresis of the left arm, the dynamometer registering only 10 kilograms, while in the right hand it registered 30 kilograms. The left leg, too, was weaker than the right. A very considerable degree of anæsthesia, both for tactile sensations and those of temperature, was present in the left forearm and hand. There was no evidence of descending sclerosis, such as rigidity, tremor, or spasm, though on the right side the reflexes were slightly increased. From these symptoms, Dr. M'Call Anderson considered that the seat of the lesion was in the cortex of the brain, upon the right side, implicating the centres for the face and arm, and impinging upon that for the leg. With regard to its nature, a hemorrhage was excluded by the absence of any evidence of atheroma, by the comparative youth of the patient, and by the absence of any affection of the kidneys. The history of rheumatic fever spoke for embolism, but the lesion was on the right side, and the cardiac sounds were perfectly pure. Dr. M'Call Anderson considered the lesion to be syphilitic, for the following reasons:—(1) The age of the

patient (37), an age at which syphilitic nervous lesions are common; (2) the somewhat earthy pallor which she presented on admission, though this was not so marked as is often the case; (3) the history of her various pregnancies. She was put upon anti-syphilitic treatment on September 29, and improved very rapidly. The following medicaments were ordered:—Inunction of 1 dr. of mercurial ointment every day, and 10 gr. potass. iodid., which, on October 3, was increased to 20 gr. thrice daily. On October 23 the headaches had completely disappeared, and with them the tenderness over the right side of the vertex. The attacks of vomiting had ceased about three weeks ago, and the twitchings of the face and hands were no longer present. The dimness of vision was less, there was no diplopia, and the paresis of the sixth nerves was absent. After ophthalmoscopic examination Dr. Hinshelwood reported that "the appearances in both eyes are those of an optic neuritis of intense degree, which is beginning to subside in the right." The power had returned to the left arm, the dynamometer registering 30 kilograms, and the remaining anæsthesia was extremely slight. (Glasgow Medical Journal, December, 1896.)

CEREBRAL DISEASE.—Localisation.

The following is taken from Dr. James Shaw's paper based on 18 cases:—Tremor and twitching were generally the expression of disease (lacunæ, &c.) of the lenticular nucleus or of abscesses, tumours, hemorrhages, or nodules (in the case of multiple sclerosis there was twitching but no characteristic tremor) in the cerebral medulla or cortex, or of lesions of the cerebellum. Unilateral convulsions denoted irritation in or near the Rolandic cortex or pressure lesions of the medulla of the temporal or parietal lobe (in cases of mine not here reported, unilateral convulsions seemed to be caused by glioma or other irritative lesion of the temporal). Cutaneous anæsthesia (Cases 1, 3, 4, 6, 12, 13, 15, 17) appeared to be the outward expression of disease of the limbic or falciform lobe, the nucleus caudatus, the posterior limb of the internal capsule, or of the Rolandic area. Case 4 tends to show that the capsular fibres transmitting sensation from the spinal foot centre to the cortex are anterior to those for the other parts of the lower extremity. Thoracico-abdominal pruritus in Case 14 appeared to be caused by destructive lesion of the inferior occipito-temporal cortex. Auditory symptoms mostly originated in disease of the temporal lobe or in its vicinity, but not necessarily of the posterior end of the first temporal gyrus, in fact, in one case, this part of the lobe was partly destroyed on both sides without deafness, either psychical or physical resulting. Visual symptoms occurred with extensive disease anywhere behind the sulcus

of Rolando. The defective vision, left amblyopia or left-sided hemianopsia, noticed in one case of (left) pre-frontal destructive lesion may have been caused by impaired nutrition of the left optic nerve. The anosmia in the same case possibly arose from a similar starvation of the left olfactory nerve combined with inability to sniff with the right nostril. But such "explanations" are liable to be fallacious, as many of those, for instance, given before the differentiation of motor from sensory aphasia undoubtedly were. (Medical Press and Circular, July 22, 1896.)

CHOREA.

From an analysis of 125 cases Dr. W. B. Prichard concludes that (1) chorea is more common in females, in the proportion of two to one, than in males. (2) The disease is more prevalent in the spring months than at any other season of the year. (3) A neurotic heredity is of unquestionable importance as an etiological factor. (4) The disease seems to be especially liable to development in the unusually intelligent and precocious; mental deterioration or perversion occurs only as a result (as a rule) of relapses of the disease. (5) Chorea may occur independently of either heart disease or rheumatism, but the frequency with which the three are found to be present in association is more than a coincidence. Further study is necessary before any positive conclusion can be reached as to the exact significance of this relationship. (Medical News, August 29, 1896.)

DELIRIUM TREMENS.—Treatment of.

The following is taken from Dr. Norman Kerr's paper:—The usefulness of the innocent yet powerful liquor ammonii acetatis in alcoholism is not limited to delirium tremens; but in delirium tremens it has appeared to combine all the advantages of the cooling and calming emetic treatment by ipecacuanha with, by the characteristic profuse perspiration which it causes, the best qualities of the wet pack and hot-air bath. Withal, there being neither chemical nor muscular restraint, the restless sufferer's already lessened nerve force (lessened by the disease) is not further drawn upon to combat the depression occasioned by opiates or other narcotism, and the nervous exhaustion from the excitation aroused by the physical restraint (envelopment in a close packing of sheet and bedclothes, as in a straight-jacket) of turbulent and inco-ordinate muscular contractions. Since relying mainly upon the acetate of ammonia, the writer has had much less trouble with cases of delirium tremens, a great deal less anxiety from serious complications (which formerly chiefly arose from the after-effects of opium, chloral, and bromide remedies), and a much larger percentage of good

recoveries. Of course, care must be taken to have sufficient attendance to guard the patient from harm. This is a point very often of vital importance. (Medical Pioneer, 1896, p. 189.)

DIPHTHERIA AND ACUTE DISSEMINATED SCLEROSIS.

An observation recently recorded by Henschen (*Fortschritte der Medicin*, November 14, 1896) illustrates an unusual nervous sequel of diphtheria, and throws some light upon the etiology of disseminated cerebro-spinal sclerosis. A girl, 14 years old, previously healthy, was seized, together with a number of other persons, with an acute affection of the throat of mild type, on the second day of which she was compelled to go to bed. On the fifth day a sense of pricking and formication was referred to the lower extremities, which were tremulous and weak. On the sixth day the patient was unable to walk, and retention of urine occurred. A day later she was scarcely able to support herself on her feet. The palsy of the legs grew gradually complete, and sensibility was lost as high as the costal arch. Later the right arm became paretic and the anæsthesia extended still further upward. The knee-jerks were now increased, although subsequently abolished. The mental state remained unaltered. The cranial nerves were uninvolved, except that visual acuity was impaired on the left, and the eyelids could not be readily elevated. The pupils were large and of sluggish reaction. After the illness had thus continued for more than a month, improvement in the motor and sensory symptoms began to set in, but a bed-sore formed, the patient wasted greatly, and broncho-pneumonia brought death. Upon post-mortem examination numerous disseminated sclerotic areas were found thoughout the length of the spinal cord. The case shows further that disseminated sclerosis is histologically an inflammatory process. (From a leading article in the Medical Record, August 15, 1896.)

DIPHTHERIA.—Ocular Paralysis in.

By Dr. Schirmer, *Ann. d'Oculist*, August, 1896. The post-diphtheritic complications occur during the first few weeks after the onset of the disease, and are not directly due to the presence of virulent microbes. The paralysis of the accommodation, first noted by Donders in 1861, is not unusual. It is characterised by being bilateral, an absence of pupillary paralysis, and spontaneous cure in a few weeks. Trouble with the extrinsic muscles is more rare, the proportion between the abducens and the ciliary muscle being about one in ten. It is usually bilateral, cures spontaneously, and a little more lasting than the ciliary muscle. Paralysis of the abductors often

develops after the accommodative paralysis, and progresses while the other is retrograding. Paralysis of the third and fourth cranial are infinitely more rare, and of the trigeminus almost never. The causes are obscure. There are four hypotheses:—The first admits a peripheral neuritis; the second a central lesion of which the neuritis would only be a consequence; the third makes out the troubles to be due to hemorrhagic or ischemic foci in the locality of the nuclei; and, finally, Hochhaus has noticed in one case a myositis combined with a peripheral neuritis, and considers the paralysis as dependent upon both affections. (Boston Medical and Surgical Journal, November 19, 1896.)

EPILEPSY.—Bromide of Strontium in.

By Anthony Roche. Two years ago I published some remarks with cases, on the use of bromide of strontium in epilepsy; since that time I have had 12 cases of this condition under my care and as they all occurred in private practice I am able to trace the course and results. It would be tedious to give the cases in full, so I will state a summary of them. Of the 12 cases 8 were in men, and 4 in females. Their ages ranged from 10 to 50, in none was any family predisposition admitted, and none could assign any cause, nor was there any evidence of syphilis; 8 had the disease from their youth. In 4 of the cases the fits occurred at least once a week, and in the other 8 at intervals of one to eight weeks. Three of the patients had some warning of the attacks—feeling depressed beforehand; in the others they had not observed any. All had been treated with varying results. The treatment I adopted besides meeting any general indications, obtaining the best hygienic surroundings possible, and advising a strictly vegetable diet with milk, was to give 20 grs. of the bromide of strontium, with 5 to 10 grs. of the bromide of ammonium or sodium, night and morning, largely diluted with water. The strontium I increased to 1 drachm, twice a day, rapidly, when I found the smaller doses did not control the attacks, and where the patient did not complain of it. I found the majority of the patients took the strontium without any depression, but generally the production of the acne rash on the face. Liq. arsenicalis added to the mixture controlled the rash and increased the appetite. This course, in all the cases, materially lessened the number of the attacks, and in 8 of the cases there has been, so far, no return of them, that is, after an interval of 16, 12, 11, 9, 8, 8½, 5½, or 4 months respectively. I cannot, of course, speak of the future and ultimate results of these cases, but the present improvement is, so far, encouraging. (Medical Press and Circular, August 12, 1896.)

Epilepsy.—Operative Treatment of.

Dr. M. A. Starr had seen 24 cases operated upon, but none were cured. He has never recommended, and will not recommend, operation in idiopathic epilepsy. He has always had the advantage of a skilful operator. These operations should only be done by surgeons who have special experience in this line of surgery, and not by the general surgeon. The exsection of cysts is very unsatisfactory, as death on the table has often followed. He has seen cases operated on very early in infantile epilepsy due to meningeal hemorrhage, without favourable result. When brain tissue, either scar tissue or normal tissue, has been excised, the attacks have also occurred. Of 11 cases of brain abscess operated upon, three recovered. All of these were seen at the various hospitals, and were usually subsequent to ear disease. He could not agree with Macewen's view as to the simplicity of diagnosis of cerebral abscess. He thought the day of trephining was over. The last operation witnessed was done in 14½ minutes by chisels and gouges. (Boston Medical and Surgical Journal, October 15, 1896.)

Epilepsy.—Surgical Treatment of Focal.

Drs. B. Sachs and A. G. Gerster's views and experiences are summed up in the following conclusions:—(1) That surgical interference is advisable in those cases of partial epilepsy in which not more than one, or at the utmost two years, have elapsed since the traumatic injury or beginning of the disease which has given rise to the convulsive seizures. (2) In case of depression or other injury to the skull, surgical interference is warranted even though a number of years have elapsed, but the prospect of recovery is brighter the shorter the period of time since the injury. (3) Simple trephining may prove sufficient for a number of cases, and particularly in those cases in which there is an injury to the skull, or in which a cystic condition is the main cause of the epilepsy. (4) Excision of cortical tissue is advisable if epilepsy has lasted but a short time, and if the symptoms point to a strictly circumscribed focus of disease. (5) Since such cortical lesions are often of a microscopical character, excision should be practised even if the tissue appears to be perfectly normal at the time of operation, but the greatest care should be exercised in order to make sure that the proper area is removed. (6) Surgical interference for the cure of epilepsy associated with infantile cerebral palsies may be attempted, particularly if too long an interval has not elapsed since the beginning of the palsy. (7) In cases of epilepsy of long standing, in which there is in all probability a widespread degeneration of the association fibres, every surgical procedure is absolutely useless. (Journal of Nervous and Mental Disease, October, 1896.)

Epilepsy.—Treatment of.

In *La Riforma Medica*, Cividali and Giannelli state that they have found that the sulphate of duboisine diminishes the number and intensity of epileptic attacks. They obtained the most favourable results in those forms of epilepsy which were associated with psychical disorders. The dose they administered was $\frac{1}{120}$ grain, which might be increased to as much as $\frac{1}{60}$ grain if the first dose did not seem sufficient. They do not find that the drug produces too much local irritation, provided strict antiseptic precautions are taken when it is injected. (Therapeutic Gazette, November 19, 1896.)

EPILEPTICS, COLONIES FOR.

The following is taken from Dr. F. Peterson's conclusions on this important subject:—The country-village idea should never be lost sight of, and everything savouring in any degree of "institution," "asylum," "pavilion plan," &c., should be avoided. A general design should be adopted, with system in the arrangement of the buildings, but no such symmetry as would in any way suggest a public institution. The cottages, villas, and shops should be simple, independent, and home-like, with their own little gardens, hedges, &c. As far as possible, each home circle should be limited to ten or fifteen patients; much greater aggregations than this are apt to destroy the family character of colony life. A small hospital, say with 20 beds, will be needed to serve as an observation station for new cases admitted, and for such as are bed-ridden from intercurrent illness or accident. In addition to hospital, cottages, villas, shops, schools, &c., a chapel, library, museum, reading-room, gymnasium, swimming-bath, rain-bath, lecture hall, and well-equipped laboratories should be provided. In developing the industries of the colony, the first object is to establish such as will subserve economy. The educational features should never be lost sight of, and, in addition to the schools and industrial training, everything that can in any way be helpful in furthering such purpose should be encouraged. The trees and flowers should be labelled with their names whenever possible, and a botanical and zoological garden be established, as far as commensurate with the means at command. The collection of objects in natural history for preservation in the museum should be a part of the recreation of the inabitants. (Medical Record, September 17, 1896.)

HEADACHE.—Treatment of.

The *Gazette hebdomadaire de médecine et de chirurgie* for August 23 recommends the following method, which is attributed to Dr. Critzmann:—To diminish the hyperæsthesia, the painful

region should be sprayed with Seltzer water, and immediately afterward energetic bilateral compression should be practised on the temples. Every two hours the patient should take a capsule containing the following mixture:—℞ Antipyrin, 8 grains; sparteine sulphate, 0·3 grain; caffeine citrate, 1·75 grains. M. Four of these capsules may be taken, even if the pain has completely disappeared. If there is gastric intolerance the mixture may be administered in the form of an enema. This treatment arrests the attack of headache, and often enables the patient to attend to his occupation; it suppresses the pain and the nausea, and renders unnecessary the consequent rest in bed to which such patients are apt to be condemned. (New York Medical Journal, September 12, 1896.)

HEMIPLEGIA IN TYPHOID FEVER.

Hemiplegia in typhoid fever is exceedingly rare. Even in children, in whom hemiplegia is a more frequent complication of the specific fevers, it is very uncommon. Of the 120 cases which form the basis of my monograph on the "Cerebral Palsies of Children," there was no instance of hemiplegia following this disease. Of the 160 cases collected by Wallenberg, 4 only occurred in typhoid fever. In a somewhat rich experience in typhoid fever no other cases of the kind have ever come under my observation. In the "Clinical Society's Transactions" (1893) Dr. Francis Hawkins has collected 17 cases from the literature. Three of these occurred in children under 15 years of age. In the 14 cases in which the data were given the time of onset was in the second week in 1 case, during the third week in 6 cases, during the fourth week in 2 cases, during convalescence in 5 cases. The right side was paralyzed in 12 of the 16 cases in which the side was mentioned. Aphasia accompanied the hemiplegia in 12 instances. Of the 17 collected cases only 2 died, and in both of these a thrombus was present in the middle cerebral artery. Probably this is the usual lesion in typhoid fever, and, as you know, in this perhaps more than in any other disease there is a tendency to the formation of thrombi in the arteries. Endocarditis is so rare that hemiplegia from embolism must be very uncommon. (From Dr. Osler's paper in the Journal of Nervous and Mental Disease, p. 299.)

INFLUENZA AND INSANITY.

Dr. Rutherford Macphail read before the British Medical Association, 1896, an analysis of 20 cases of post-influenzal insanity admitted under his care into the Derby Borough Asylum in the five years ending December 31st, 1895. He included only cases among the recent admissions whose insanity was attributed to influenza, or who were reported to have had

an attack of influenza a few months previously. This represented 4·8 per cent. of the admissions. Of the 20 cases, 9 were men and 11 women. The youngest patient was a lad aged 18, the oldest a man aged 71. The average ages were, for men, 37·6; for women, 39·2. The largest number of cases (8) occurred in the fifth decade. Hereditary predisposition to insanity was admitted in 6 of the 20 cases. In all except 2 the attack of insanity was an initial one. As to the form of mental disease, melancholia occurred in the cases of 3 men and 7 women, mania in 5 men and 4 women, and 1 man was a general paralytic. Fifty per cent. of the cases were therefore melancholics, a larger proportion of melancholia than usual, for the records of the asylum during the five years in question show only a percentage of 20 melancholics to all admissions. The type of melancholia varied from simple depression to the acute forms, with well-marked delusions. The delusions most common in the maniacal cases were those of suspicion and of poisoning. Four of the cases were actively suicidal, and had made attempts on their lives at home. The results were as follows:—Among the men 4 recovered, 2 were relieved, 1 died, and 2 are still under treatment and are chronic. Of the women 8 recovered, 1 died, and 2 have become chronic. All the melancholics recovered except one woman, who died. The average residence in the asylum of those who recovered was three months for men and four months for women. These numbers are too small to permit of any definite conclusions, and accordingly no attempt was made to dogmatise. It was, however, worthy of note that in the cases under review the average percentage of recoveries to the total admissions was higher than usually obtains in public asylums, while the average period of asylum residence was considerably lower. (British Medical Journal, September 26, 1896.)

INSANITY, POST-FEBRILE.

By Pilgrim (*State Hospitals Bulletin*, January, 1896). Out of more than 6,000 admissions to the Hudson River State Hospital only 24 could be traced to exanthematous fevers. Thirteen of these were caused by typhoid, 9 by scarlatina, and 2 by smallpox. From the fact that the mental affection usually develops during convalescence, it is concluded that it bears no relation to the intensity of the fever, but results rather from perverted nutrition and an impoverished condition of the nerve cells. About 50 per cent. of the typhoid cases recover, 20 per cent. die from exhaustion, and 30 per cent. gravitate into chronic insanity. The arrest of mental development, or dementia induced by scarlatina, presents little encouragement, and cases resulting from variola are equally hopeless. (Dr. Stewart's abstract in the Glasgow Medical Journal, 1896, p. 314.)

MANIA AND MELANCHOLIA.—Prognosis of.

Kraepelin's conception of mania (*Psychiatrie*, 1896) is not essentially different from that generally accepted by authorities on mental disease, but he does not recognise it as an independent entity in his classification. All cases, according to him, especially those in the earlier and middle periods of life, before the downward slope of life has been reached, are properly to be referred to the periodic insanities; they are not single, isolated attacks of a disease that may never be again suffered from, but are indications of a constitutional disorder, sure in time to recur. He bases this opinion on an observation of 1,000 cases carried over a great many years, and in all these he has found but 1 in whom the disorder did not recur and that is not in support of the view stated above. A single exception in such a series only proves the rule, and so far as known no one has ever followed up as methodically and carefully the after-histories of his patients as Kraepelin seems to have done. He himself admits that the interval of mental health may be long—ten years or even more in some cases—but he claims none the less the validity of the rule laid down that recurrence is inevitable, sooner or later. If we accept Kraepelin's views, our prognosis of mania and of the so-called simple insanities generally is completely reversed; instead of being the least they are to be counted amongst the most formidable types of insanity as regards the future of the patient. What is true of mania is true also in regard to melancholia, which he classes amongst the mental disorders of the period of involution; when it occurs in early life it also falls in his system into the periodic insanities. (From leader in the Journal of the American Medical Association, October 17, 1896.)

MENINGEAL HEMORRHAGE.

The positive diagnosis between extradural and subdural hemorrhage is in the majority of cases difficult, and in many impossible. The very slow development of symptoms following trauma, with paralysis and coma later, point very strongly to extradural hemorrhage. Jacobson, basing his conclusions on the study of about 80 cases, asserts that dilatation of the pupil on the side of the lesion is diagnostic of extradural hemorrhage. This phenomenon, which, as Jacobson justly observes, should be designated Hutchinson's pupil, is produced by the extension of clot towards the base, causing pressure on the third nerve. It seems doubtful, however, if much importance can be attached to it as indicating upon which side of the dura the clot lies. After a careful study of numerous recorded cases, and in the light of my own observation, I feel justified in asserting that the only thing which can be safely predicted upon Hutchinson's pupil is that the pressure is affecting the base of the brain upon the

corresponding side. It is, however, of the greatest value in this connection; and when occurring in the historical development of the clinical picture of a case of meningeal hemorrhage, it furnishes an external sign of internal events that is at once graphic and important. (From Dr. G. W. McCaskey's paper, New York Medical Journal, September 19, 1896.)

MENINGITIS, CEREBRO-SPINAL.—Treatment by Hot Baths.

Dr. Alfred Wolisch reports seven cases, of which five completely recovered. Of the deaths, one was a *foudroyant* case, which died within forty-eight hours, the others in the late stage of the disease, the baths being employed only during the first two weeks. No statement can be definitely made as to the precise action of the baths, although it is probable that the resulting hyperæmia of the skin lessens the amount of blood contained in the brain and spinal cord. It is also likely that in the markedly increased perspiration the toxin which has accumulated in the blood may be eliminated. These baths in the reported cases seemed to lower the temperature, to have a toning and regulating influence upon the heart, and to relieve pain and restlessness. The method is as follows:—The patient is placed in the bath at the temperature of 90·5° to 92·75° F., and hot water gradually added until 104° F. is reached. While in the bath an ice-bag or a Leiter cold-water coil is placed upon the head. The placing in, and removal from, the bath are done with great care and rapidity; this means close proximity of bath and bed, and both should be at the same level. If there is great tenderness of the back the sheet may be used to move the patient. The bath must be previously cushioned and thorough after-drying omitted. The patient is placed upon a dry sheet, laid upon a woollen quilt, and covered by the same, over which a light cover is placed; he remains in this position for one hour before removal. The time of the bath is immaterial—early morning or late evening. Nourishing food, even meat, should be given; even diarrhœa, should this occur, does not contra-indicate it. Wine, brandy (in milk), also beer, are given, for the author regards alcohol as a tonic and hypnotic of the first rank in this disease.—*Therapeutische Monatshefte*, 1896, Heft 5, S. 254. (American Journal of the Medical Sciences, 1896, p. 337.)

MENINGITIS, TUBERCULOUS.

By Dr. A. Jacobi. A preventive treatment only may be expected to do good, if anything will. Constipation must be overcome. Eczema and other lesions of the surface should be healed. Their presence is a constant source of danger, both by reason of the opportunities afforded for a direct invasion of

microbes, and of the irritation and swelling of lymph bodies. These, when found, must be removed by internal treatment, massage, ointments (green soap, iodide-lanoline mixture), or enucleation. Nasal catarrh should be immediately relieved; its persistence is a cause of "scrofulous glands," and, possibly, of secondary tuberculosis, and also of direct invasion of germs through the patent orifices of the lymph vessels at the base of the cranium and the extra-dural tissue. The best general preventive treatment of infants and children with a predisposition to tubercular meningitis, rendered probable by hereditary taint and by suspicious symptoms, consists in the regulation of the diet and hygiene; animal food mostly, daily cool or cold bathing, with vigorous friction, open windows, exercise, cod liver oil during the cool and cold months, arsenic in regular small doses, and pure guaiacol (or the carbonate of guaiacol) for many months in succession through a course of years. (Pediatrics, September 15, 1896.)

MYELIN, OR FRESH SHEEP'S BRAIN.

Myelin was given to 17 patients. Six of them suffered from various forms of melancholia; 3 from chronic mania; 2 from paranoia; 1 from moderate dementia; 5 from organic diseases of the spinal cord. The most marked result was in the case of primary dementia. The patient was a stout man, about 40, and was under treatment in the Royal Infirmary. His memory and intelligence were both greatly impaired, and there was some thickness of speech. He had also palsy of both legs and weakness of both arms. After five weeks of ordinary treatment he was not better, but rather worse. Three days after the myelin was begun there was marked improvement, both in mind and body. In five days he could not only stand, but also walk a few steps; in nine days he walked up and down the ward; and in less than six weeks after the myelin was begun he left the hospital to resume his employment. Though nearly well his recovery could not be said to be perfect. Another patient, a case of resistive melancholia of three years' standing, who had not spoken or done any work for a year, within a week after the myelin was begun was knitting and speaking a few words occasionally. This was in January, 1893; since then she has been more or less maniacal. I consider her incurable. In a third patient, aged 60, profoundly melancholic, there was recovery, and it is probable that myelin was very helpful in causing it. But it was not clear, as a little improvement was noticeable before this agent was begun. In a case of chronic myelitis the patient's power of walking was markedly improved for some weeks, but this change for the better was not maintained, and he gradually relapsed into his previous

condition. No distinct alteration, either for the better or the worse, was observable in any of the other patients. There was no change in their physical condition when taking the medicine, if we may so call it. Mixed with glycerine, flavoured and coloured with cinnamon and cochineal, it was not unpleasant to the taste. In one or two patients the larger dose of two teaspoonfuls caused sickness, but one teaspoonful was easily borne by the stomach in all cases. (From Dr. Alexander Robertson's paper in the British Medical Journal, September 26, 1896.)

NEURASTHENIA, NATURE OF.

By Dr. Philip Coombs Knapp, Boston. This study was based on one hundred cases seen in hospital practice and fifty cases seen in private practice. The chief symptoms were nervousness and weakness—the "irritable weakness" which is considered the essential symptom of neurasthenia. Next in frequency came headache, indigestion, insomnia, and palpitation. Depression, backache, and other symptoms were much less common. Neurasthenia was considered to be analogous to chronic fatigue, and to be due primarily to exhaustion of the cells in the brain cortex. Mental depression was not infrequent, but it was usually secondary to the neurasthenic condition of the physiological result of the causes (grief, worry) which had produced the neurasthenia. Among the morbid fears were, first, those pertaining to the physical welfare of the patient, often based upon physical symptoms and having a rational basis, although resting upon false premises and ignorance of the significance of these symptoms. In other cases the fears were more of a delusional character, and these cases were not neurasthenia but true hypochondria—a mental state akin in some degree to paranoia. The second class of morbid fears were the so-called phobias—agoraphobia, the dread of insects, snakes, high places, &c. These fears exist in perfectly healthy people, who, under their influence, may be thrown into considerable anxiety and distress. In other cases the morbid fears are secondary to certain insistent ideas, as in mysophobia and some cases of the fear of people. These are forms of *folie du dente.* In other forms of *folie du dente* there are insistent ideas with morbid speculation, introspection, doubt, and metaphysical quibbling, but without morbid fears. These fears and insistent ideas are not uncommon in mild forms in perfectly healthy persons. In the severe forms they exist as independent psychoses; hypochondriasis, the phobo-psychosis, and the phobic and speculative forms of *folie du dente.* These different psychoses may exist independently without any trace of neurasthenia; they are to be found in only a small percentage of neurasthenic cases, which is greater among private patients. When found in neurasthenia these fears and

insistent ideas are neither causes nor symptoms of neurasthenia, but indicative of the co-existence of another affection. (Journal of Nervous and Mental Disease, October, 1896).

PONS, VENESECTION IN HEMORRHAGE INTO THE.

At a recent meeting of the Clinical Society of London, a report of which appears in *The Lancet*, Dr. F. L. Benham read the details of a case of hemorrhage into the pons Varolii in which venesection was followed by recovery. The case was that of a widow, aged 53. She was suddenly seized while dressing one morning with apoplexy, attended by epileptiform convulsions, chiefly on the left side, and complete unconsciousness; the eyes were shut; the head, eyeballs, and mouth were all drawn to the right side; and the pupils were much contracted, the left being rather the smaller. Respiration was much embarrassed. There was foaming at the mouth, but the tongue was not bitten. The surface of the body was pale and dusky, with a clammy sweat. Within three-quarters of an hour from the onset of the attack she was bled from the right median cephalic vein. Forty-eight ounces of blood were withdrawn. When this was done the convulsions ceased and breathing became easy; the pupils were larger, and the conjugate deviation of the eyes and head was less marked. The skin was pale but less dusky. Consciousness had not returned. Five grains of calomel were administered, in addition to croton oil. There was no return of the convulsions at all; the eyes, head, and limbs moved more freely and spontaneously, but there was found to be some weakness of the right side, and later distinct anæsthesia was detected in the right arm and leg. Sensibility and consciousness gradually returned, but complete consciousness and memory did not return for twelve days, the patient describing this interval afterward as an absolute blank. There was slight aphasia during recovery. The paralysis of the left side of the face and right limbs lasted only a short time, but traces of anæsthesia in certain fingers and toes persisted for some weeks. Retention of urine occurred immediately after the apoplexy, which caused cystitis. There was obstinate constipation all along. The patient steadily recovered. In a month's time she was able to walk about the room, and in six weeks from the onset she went out of doors for a walk. She had remained in excellent health up to the time of the report, eleven months after. (Medical Record, August 15, 1896.)

RACHIALGIA OF HYSTERICAL ORIGIN SIMULATING POTT'S DISEASE.

MM. Gendron and Brunet's conclusions (*Ann. de la Policlinique de Bordeaux*, July, 1896) are as follows:—Undoubtedly hyper-

æsthesia in the region of the lumbar spine does not afford a sufficient reason to admit the existence of Pott's disease, especially when the other symptoms of the affection are entirely absent; but it is well, nevertheless, to be careful, for a superficial examination of a patient may lead to an error. An interesting point to be noted is the fact that the child's cousin suffered from Pott's disease, and that the disease had developed simultaneously in both. The possible contagion of tuberculosis, and the predisposition caused by common heredity, are arguments which may be advanced in favour of the identity of the nature of the two affections. In this instance, however, it is doubtful, for in one case Pott's disease was evident, while in the other only the subjective symptoms were observed. Under these circumstances the question may be asked whether it was not a case of simulation, or, rather, unconscious suggestion. The patient had the latent germs of a neurosis, which manifested themselves on the occasion of violent emotion, and the frequent reference to her cousin's health caused a vivid impression on her mind, and gave rise to an outbreak of painful symptoms which were identical in appearance only with those of Pott's disease. (New York Medical Journal, August 15, 1896.)

ROENTGEN RAYS, and BULLETS IN THE BRAIN.

A. Eulenberg (*Deut. med. Woch.*, August 17, 1896) relates 2 cases in which it was possible to localise bullets in the intracranial cavity by means of radiography. *Case 1.*—A man, aged 18, accidentally shot himself in the head with a revolver. The bullet entered 3½ cm. above and 2 cm. in front of the attachment of the ear. There was complete unconsciousness until the following morning. On the third day a left-sided homonymous hemianopsia developed, and then a left hemiplegia. The bladder was temporarily paralysed. The hemianopsia disappeared on the tenth day, and the hemiplegia gradually got better, with the exception of the lower part of the leg. The patient was lame, but could walk. At the end of the seventh week Eulenberg found the lower face muscles weaker on the left side than on the right, and also the left arm weaker than the right. The gait was faltering, and the left leg stiff. Movements of the foot and lower leg were only just possible. Sensation was considerably affected. There was pain in the back of the head. Progressive improvement ensued. Eulenberg thought that the bullet had penetrated to the right of the sella turcica, injuring the right optic tract and the right crus. By radiography Buka showed that the ball was in the middle fossa of the skull to the right of the middle line. *Case 2.*—A man, aged 33, attempted suicide ten years ago. The revolver wound was in the hinder part of the right temporal region. At first

there were signs of intracranial pressure. For the first four years only slight symptoms were noted. Attacks of pain in the head supervened, and the patient thought that the bullet must still be present. He was then in an asylum for five years, and discharged as incurable. After his discharge he seems to have been able to work. When seen by Eulenberg the man was pale and wasted. Hardly a trace of bodily or mental symptoms could be made out. There was occasional headache in the right supraorbital and temporal regions. There was thus no clinical evidence that the bullet was still present. It was, however, shown by Buka, by means of the Roentgen rays, that the bullet was situated in the middle fossa of the skull behind the right orbital fissure. (British Medical Journal, October 24, 1896, Epitome, par. 344.)

SCIATICA.—Bath Treatment of.

The popular custom of using hot applications in preference to cold ones for the relief of pain is in full agreement with scientific practice, and this is particularly true of the use of baths in sciatica. There are many Spas in England and on the Continent where the waters and bath appliances are useful in this disease. There are many methods of bath treatment, apart from the use of mineral-water baths, such as the Turkish or hot-air bath, the vapour or Russian bath, steam douches and peat baths, which are more or less useful in sciatica. It is, however, with the Buxton mineral-water bath, used most commonly in the form of simple immersion or a horizontal douche, that I have obtained the most uniform success. The temperature varies from 100° F. to 90° F., according to pain or tenderness. The time of immersion from five to ten minutes. The douche to affected parts from half-a-minute to two minutes. In some cases the massage bath is useful. In others I find it most advantageous to use the hot mineral douche without either immersion or massage on one day, and dry massage on another day, alternately. This is less fatiguing than the massage bath where the system is much run down. The number of baths and the time occupied in a course, vary according to the case, but may be said to average twelve baths in a period of three weeks. It is difficult to give any satisfactory explanation of the action of the Buxton thermal baths and douches beyond that of ordinary water, or of other mineral waters, at the same temperatures. That the influence of these baths and douches, however, is undoubtedly different, is proved by the essentially opposite primary effects produced by warm baths of ordinary water or of the Buxton mineral water. The primary influence of a warm bath of ordinary water in sciatica is to act as a sedative to the painful nerves and the nervous system generally, relieving the

pain at least temporarily and never increasing it. On the other hand, the warm Buxton bath or douche almost invariably increases the pain, either at the time or shortly after application, and this disturbing influence of the bath will often continue for the first two or three weeks of the treatment. (From Dr. Hyde's paper, Medical Press and Circular, October 21, 1896.)

SPINAL PUNCTURE.

Leyden (*Deut. med. Woch.*, September 24, 1896) narrated the history of 3 cases, in which the meningococcus was found during life. Of these 1 recovered, and as the improvement advanced, the diplococci became less numerous, and finally disappeared from the cerebro-spinal fluid. The diagnosis in the others was confirmed port-mortem. Like Heubner, he regards the meningococcus as the cause of epidemic cerebro-spinal meningitis. Its characters are remarkable. It has a strong resemblance to the gonococcus. Both stain similarly with methylene-blue; both are decolourised by Gram's method (the meningococcus with greater difficulty). But the meningococcus forms tetracocci as well as diplococci, and when the diplococci are arranged in rows, they show a clear central streak. The meningococcus, too, possesses a capsule, and thrives fairly well on ordinary nutritive media.

Huber insisted on the importance of the capsule, as distinguishing the meningococcus from the gonococcus. It is clearly brought out by prolonged staining in very dilute carbol-fuchsin, and decolourising in water to which acetic acid has been added. The diplococcus frequently lies within the nucleus, the gonococcus seldom.

Fraenkel doubted if the meningococcus were yet proved to be the only cause of epidemic cerebro-spinal meningitis, and cited an epidemic reported by Paniensky, in which the diplococcus pneumoniæ was found in all the cases examined post-mortem.

Fürbringer considered that the discovery of the meningococcus in a case of meningitis was proof of its epidemic character, and Heubner, replying, said that the behaviour of the meningococcus in cultures distinguished it from both the gonococcus and the pneumococcus. It was much more easily cultivated than the gonococcus, and grew more luxuriantly with each generation, which was not the case with the pneumococcus. (Dr. Jack's abstract in the Glasgow Medical Journal, November, 1896.)

STATUS EPILEPTICUS.—Amyl Nitrite in.

By Surgeon-Captain O. L. Robinson. About nine o'clock one morning I was called to see a woman, aged 34 years, who, I was told, had had a succession of fits increasing in severity since

11.30 p.m. the previous night. She had been subject to "fits" since childhood; she had not, however, had an attack until the present one for the past six months. I found her lying in a comatose condition, only interrupted about every twenty minutes by an epileptic seizure; in the intervals she lay with flaccid limbs, purple face, dilated pupils, and stertorous breathing. The temperature was 103° F. and the pulse 130 per minute. Ice was ordered to the head and the upper part of the spine, and a rectal injection of bromide of potassium and chloral hydrate was given. There was no appreciable change in her condition and the injection was repeated in two hours' time. At 3 p.m. she appeared to be considerably worse, the fits continued unabated in severity at intervals of from fifteen to twenty minutes, her temperature was 105°, and her pulse was of such rapidity that it could hardly be counted. A 3-minim capsule of amyl nitrite was inhaled at 3 p.m. The next fit, which occurred about ten minutes afterwards, was certainly less severe; this was followed by two more at about the usual interval of still lessened severity. Another capsule was inhaled at 4 p.m.; after this she had one slight fit and partially recovered consciousness; she then fell into a heavy sleep, in which state she remained until 7 a.m. the following morning, when she woke up, feeling dazed and sore all over, but otherwise well. The temperature fell to 101° at 8 p.m. The same evening and the next morning it was subnormal. The action of the amyl nitrite in this case was most marked and undoubtedly saved her life. I remember seeing a somewhat similar case, of which I have unfortunately lost the notes, of a young girl, aged 19 years, who had been many hours in the epileptic state, and in which the action of the drug proved equally efficacious. (The Lancet, October 3, 1896.)

THYROID TREATMENT IN THE TETANY OF CHILDREN.

The *Presse Médicale* for July 11 contains an abstract of an article which was published in the *Riforma Medica*, Nos. 115 and 116, 1896, in which the writer states that Dr. Leon Maestro has experimented with this method of treatment in three cases of tetany. The thyroid gland was given raw or slightly cooked. Small dozes were given in the beginning, and gradually increased until the amount of 30 grains a day was reached. The results obtained were very satisfactory in the three cases, and the author felt justified, in spite of the limited number of observations on record, in forming the following conclusions:—(1) The administration of the thyroid gland is extremely useful in the treatment of idiopathic tetany in children, as it always diminishes the intensity and the frequency of the attacks, and shortens the duration of

the disease; it also notably hastens the arrival of the latent period which precedes recovery. (2) The treatment is well tolerated by the children. (3) The organic changes, the digestive functions, and diuresis are not notably influenced by this mode of treatment. (4) the circulatory and respiratory functions are accomplished normally during this treatment. (5) In very young children, on account of their perfect tolerance, it is useful to administer the thyroid gland, raw or slightly cooked, internally. (6) With the exception of certain peculiar cases it is not necessary to suspend the treatment from time to time. (7) The daily dose is from 30 to 60 grains. (8) This treatment is not opposed to the symptomatic treatment, as it does not present any incompatibility with the methods ordinarily employed.—*New York Medical Journal.* (Pediatrics, 1896, p. 474.)

TIC-DOULOUREUX.—Method of Relieving.

The following treatment is recommended by Dr. Dana:—(1) *The use of Strychnia.*—This is given in single daily doses, hypodermically. I usually begin with gr. 1-30, and this is very slowly increased until by the fifteenth or twentieth day gr. 1-6 to 1-4 is given. Most patients cannot take over gr. 1-5, an excess being shown by stiffness in the jaws and legs, trembling and nervousness. Sometimes the largest doses are not well borne, and are not advisable, but this is rare. I have noticed, as has Dr. Elliott, that the large doses, gr. 1-15 to 1-5, often have a decidedly anodyne effect, quieting the patient for hours, like a dose of morphine. Sometimes the largest doses temporarily increase the pain, but this is certainly rare. The best results are in those who feel this anodyne effect. The peculiar effect of strychnia in massive doses is well shown in a patient now under treatment. An injection of gr. 1-5 produces at first a slight spasm of pain directly after the administration; this lasts five or ten minutes, then gradually subsides. Meanwhile the patient grows quieter, and enters into a half somnolent state, as though she had received morphine. Occasionally, as we know, tic-douloureux is associated with a motor tic, involving the seventh nerve, and even the tongue and masseters (twelfth and fifth). This motor spasm does not contra-indicate the use of strychnia. After receiving the maximum dose it should be continued for a week or ten days, and then gradually reduced, so that by the end of five to six weeks the beginning dose is reached. The drug is then stopped, and is replaced by others. (2) *The Use of Iodides and Tonics.*—The patient is now placed on potas. iodide, gr. v., *ter in die* increased to gr. xx.; and tincture of iron, *m* v., increased, if possible, *m* xxx, and well diluted. In some cases salicylate of potassium replaces the

iodide, or nitro-glycerine is added to the iodide or iron. I find in at least one-fourth of my cases that there is a trace of albumen in the urine, with evidences of interstitial nephritis and arterial sclerosis. It is this fact that obliges one to use a certain amount of discrimination in the terminal management of the disorder. The importance of arterial sclerosis in the pathology of tic I have already shown, but I do not propose to enter upon this branch of the subject here. (3) *Rest in Bed.*—I believe it can not be too stringently insisted upon. It should secure for the patient at the same time freedom from anxiety, physical rest, an equable temperature to the exposed nerve, and capacity to take up more strychnia without unpleasant symptoms at his home, but this can only be allowed if he is free there from any disturbing domestic or business anxieties. In some cases it is sufficient to allow the patient to rise at noon and remain the rest of the day on a lounge, but this concession I yield rarely and with reluctance. The room must be kept as nearly as possible at 68° F., and the air should be moderately humid. At the end of four weeks I allow an outing of two hours daily, and at the end of six weeks he can resume his ordinary avocations. In obstinate cases the patient after the treatment, though feeling vastly better, still has some twinges of pain. He must then be promptly put through the course as before. Sometimes, also, the pain returns in a few weeks, and then a second treatment is needed. Twice I have found this additional treatment indicated; in both cases it was successful. The foregoing description shows that my plan of treatment is not the simple and easy application of a specific. (From Dr. Dana's paper in the Post Graduate, 1896, p. 295.)

TREATMENT ANTISYPHILITIC, AND PREVENTION OF SUPPOSED SYPHILITIC NERVOUS DISEASE.

Dr. Joseph Collins' (New York) conclusions are:—(1) Exudative and degenerative diseases due to syphilis are most liable to show themselves at the end of the third and beginning of the fourth decade of life. (2) Thorough and prolonged administration of antisyphilitic remedies during the activity of the virus does not seem to materially prolong this time limit. (3) That active and prolonged antisyphilitic treatment does seem to prevent the development of such diseases as locomotor ataxia and general paresis. This is true of degenerative diseases, though treatment may, however, have some effect in preventing the exudative diseases of the nervous system, such as syphilis of the spinal cord, disease of the blood-vessels, &c. (4) Cases of tabes and general paresis in which syphilis is confessed, and in which

treatment has been most desultory and incomplete, are not more liable to the early development or to the severe manifestations of either of these two diseases than those in which the treatment has been all it should be. (5) That the administration of antisyphilitic measures in the most approved way does not fulfil the requirements of cure, and that syphilis is often an incurable disease.

Dr. Osler said that his experience was diametrically opposed to the views of Dr. Collins. The majority of severe cases of nervous disease occurring in syphilitics were in those who had either been badly treated or not treated at all. Early, thorough, systematic, and prolonged treatment will prevent the development of degenerative disease of the nervous system in later life. (Medical News, September 19, 1896.)

TUMOUR, CEREBRAL.—Successful Removal of.

Drs. Keen and Thomas report this case. The patient, a young man of 19, with an excellent family and personal history, and no history of accident, in December, 1895, had an attack of intense headache and vomiting, but without optic neuritis. The latter symptom followed in the middle of January, with later blindness in right eye, slight vision remaining in the left; slight protrusion of left eyeball, pupils equal and normal, smell, hearing and taste unaffected. Paresis of the lower right face, sensation and the muscles of mastication unaffected, no muscular weakness in either the arms or legs, but there was a good deal of muscular restlessness of the right hand, persisting even during sleep. Reflexes present. Mental condition poor. He was dull and apathetic, and sometimes slightly wandering mentally. After the early headache and vomiting neither of these was a marked feature. There was slight aphasia. Drs. Osler and Starr saw the patient with Dr. Thomas, and the conclusion was reached that it was a tumour in the left frontal lobe, most likely at the base of the second frontal convolution and probably subcortical. On May 10 Dr. Keene operated. The tumour presented through a rupture of the cortex at the base of the second frontal convolution as had been diagnosticated. The tumour was easily scooped out by the fingers. The lateral ventricle was then seen to be widely open. After the operation there was no increase of the paralysis. In two weeks the patient had entirely recovered. The tumour was 7·5 cm. long, 5·5 cm. broad, and 4 cm. deep, and weighed two and a half ounces. It was a hard, non-infiltrating sarcoma. (Medical News, September 29, 1896.)

AFFECTIONS OF THE CIRCULATORY SYSTEM.

ANEURISM.—Treatment of.

A. Fraenkel observed that we had to be careful as to considering results of treatment. Aneurism might come to a standstill itself; it might even get better. We could distinguish two groups of therapeutic methods. One dangerous for the patient, the introduction of foreign bodies into the aneurismal sac, and good could only be expected from it in certain cases. It should therefore be avoided. Two harmless remedies, bearing in mind the frequent syphilitic origin of the disease, a course of inunction should be tried, repeated, and the patient kept six weeks in bed on a bland diet. The results obtained in this way did not seem bad, for in severe cases the threatening symptoms receded. Possibly the disease was arrested by this means. Relative improvement in aneurism was not so rare as preparations showed, as, for instance, where such collections of fibrin had been found in the aneurismal sac that the blood current had had to form another channel.

Hr. Litten did not deny the usefulness of anti-syphilitic treatment, and especially of potassium iodide. But the good results should not always be attributed to the remedy. Where anti-syphilitic treatment did good it was only so far as the syphilis was concerned. In two cases in which he had seen platinum wire introduced, and the patients died, the treatment had not contributed to the death.

Hr. Senator said that syphilis was undoubtedly the most frequent cause of the disease, as he had said nineteen years before. In aneurism in young people it almost always originated in syphilitic arterio-sclerosis; a small percentage was caused by abuse of tobacco, which also led to arterio-sclerosis. In later life senile sclerosis appeared. As regarded treatment he entirely agreed with Fraenkel. He was firmly convinced that by suitable treatment, viz., prolonged absolute rest, bland and, as he would add, rather spare diet, and potassium iodide, good results would be obtained. (Medical Press and Circular, November 18, 1896.)

CALOMEL IN HEART DISEASE.

Moldarescu states that, in his opinion, calomel is of very great value in the treatment of cardiac disease. He administers as large doses as eight to ten grains each day, divided into six doses, which may be given every two or three hours. In those cases in which there is a comparatively small cardiac lesion, with marked dyspnœa and hypertrophy, or dilatation, with albuminuria, œdema, and ascites, he finds that this treatment

is useful. After the first few doses have been given, as a rule, an increase in diuresis is established, and by the second or third day quite copious evacuations of the bowels take place. The respiration is more easy; the liver is less congested and smaller in volume; the urine is more abundant and clear, and closely approximates the normal quantity, after the third or fourth day exceeding this amount; and there is a marked improvement in all the symptoms, cardiac and otherwise. Even when the calomel is no longer administered, these good results persist for twenty-four to forty-eight hours. As a rule, however, it is better to administer smaller doses, such as one to two grains a day, for a considerable period. In order to prevent excessive salivation, or to relieve it when already produced, Moldarescu prescribes the following mouth-wash:—℞ Chlorate of potassium, 2½ drachms; tannic acid, 4 grains; distilled water, 10 ounces. At the same time that the calomel is administered he orders an absolute milk diet. Out of 107 cases of grave cardiac disorder, with distressing symptoms of failure of the heart, treated in this manner, he has had fourteen deaths; two of these died of pneumonia after the heart symptoms were relieved; three died before the treatment had sufficient opportunity to be tried; the remaining nine cases were of advanced years, and the disease was also far advanced. Moldarescu, of course, does not pretend that calomel can cure heart disease, but he believes that it prolongs life, ameliorates the symptoms, and does the patient great good. After the patient has been relieved by calomel the administration of iodide of potassium is of value.—*Revue de Thérapeutique Médico-Chirurgical*, June 1, 1896. (Therapeutic Gazette, November 15, 1896.)

DIGITALIS.—Abuse of.

By Dr. W. T. English. A vague idea exists that this drug is a cure for heart disease, hence the abuse in its employment. Much variation exists as to the dosage owing to the variety of forms, now the tincture, now the infusion, the powdered leafs, &c. The tincture should be employed for its tonic effect. The infusion is a diuretic. Both may be combined. The objection to the leaves is that they are not readily assimilated. It is employed indiscriminately as a diuretic in Bright's disease. It is often forgotten that its effects are slow in coming as well as deliberate in leaving. It is foolhardy to use it in chronic nephritis accompanied with high peripheral pressure. It is forgotten that in moderate doses it stimulates the musculo-motor portion of the heart, increases the action of the inhibitory apparatus, &c. In those whose vocation forces them to the extreme of exertion, the heart becomes muscular in proportion. Such use of digitalis is a sin against the heart, a goad to

a loaded organ. In palpitation due to neurosal conditions, its use may convert it into an incurable disease. One fault is to give it without telling the patient to abstain from exercise while under its influence. Such persons should live in perfect physical and mental quiet. In malformation it is contra-indicated. In mitral regurgitation there is a time when it is valuable. (Journal of the American Medical Association, June 27, 1896).

ENDOCARDITIS, MALIGNANT.—Treatment by Anti-streptococcus Serum.

Dr. Sainsbury, after recording a case followed by recovery, makes the following remarks:—This case of malignant endocarditis responded so promptly and satisfactorily to the serum treatment that no apology is needed for recording it. Before the injections were commenced the patient had lapsed into a condition of marked cachexia; within two or three days the improvement in the aspect and bearing of the boy was unmistakeable—he was clearer-looking, brighter, and the peeling skin cleaned rapidly. Neither local reaction at the site of the puncture nor any general reaction was observed except on September 1, the time of the last injection, when the sudden rise of temperature, the general appearance of illness, and the pain at the site of the injection followed so speedily upon the injection that there seemed no other explanation for the symptoms than the dose of serum. The boy, however, soon rallied, and then, curiously, took a fresh start; his temperature for the first time became normal, and his advance was then so rapid and uninterrupted that there was no excuse for another injection. Thus all the injections were markedly effective, but most so this last injection, which produced definite local and general symptoms. Was this reaction an unnecessary concomitant—the result of a by-product, or was it to be regarded as of the nature of a curative reaction? In a recent case of ulcerative endocarditis under my care at the Victoria Park Hospital for Chest Diseases the anti-streptococcic serum failed to arrest the disease and seemed to have no beneficial effects; in this case, however, there was, in addition to the endocarditis, grave kidney disease with cortical destruction, which may have accounted for this; the disease was, moreover, in a more advanced stage and of more virulent type. (The Lancet, October 17, 1896.)

HEART.—A Prognosis and Treatment of Gouty Affections of.

Th. Schott (*Berl. klin. Woch.*, June 8, 1896) says that in pure and not advanced gouty affections of the heart the prognosis as

regards life is favourable, but in severe cases, with anatomical changes, it is doubtful and mostly bad, but even here something can be done to prolong life. In predisposed individuals over-exertion as well as too great inactivity must be avoided. A mixed diet is best suited to these cases. Stimulants should be avoided; light Rhine wines are the least harmful. A sufficient exercise in the open air is necessary. The use of salicylates, antipyrin, antifebrin for pains requires caution. The author has had unpleasant experiences with colchicum. Piperazine has not in the author's experience proved of much service. Lithia salts are best avoided owing to their irritating action on the alimentary canal. The various potassium salts, owing to their toxic action on the heart, should be very cautiously used. Opium should be given as little as possible. Digitalis and also strophanthus are to be preferred to all other cardiac tonics. The author then discusses the value of the mineral waters. Slightly alkaline waters, such as those of Offenbach, Obersalzbrunner, Nauheim, &c., are of greater service than the stronger so-called gout waters. Hydrotherapy can only be used in the shape of warm packs in the treatment of pain. General massage may be of service, especially when the patient is confined to bed owing to an attack of gout, &c. Gymnastic exercises can only be of use by increasing metabolism. As regards climate, moderately high altitudes are better than low-lying places; in the summer mid-European places, with their moderate warmth; and in the winter South Italy, Algiers, or Egypt are suitable. Cold and especially damp climates must be avoided. As regards baths, the author warns against trying to call forth the attack of gout by baths; he has only seen an unfavourable action exercised on the heart and kidneys by such measures. A considerable part of the success of health resorts lies in the withdrawing of patients from home troubles, and in their living a more rational life. (British Medical Journal, July 25, 1896, Epitome.)

Heart.—Congenital Malformation.

Dr. F. A. Pickards summarises thus his case of imperfect closure of the auricular and ventricular septa in a man aged 50, whose death was due to abscess of the brain:—Clinically, the case is of interest from the fact that the patient apparently suffered so little from a marked cardiac defect that he was able to perform the arduous duties of a sailor until the onset of a presumably independent cerebral lesion, eighteen days before his death; from the occurrence of a cerebral abscess, the only discoverable source of origin for which was the inflamed vermiform appendix. Pathologically, the interest in the case lies in the great lack of development of the septum atriorum, the smallness of the left

and large development of the right side of the heart, and the peculiar arrangement of the anterior mitral leaflet and of the chordæ tendineæ of the anterior portion thereof. (Medical News, August 29, 1896.)

Heart.—Treatment of Failure of.

Dr. Byrom Bramwell (British Medical Association meeting, 1896) thought that all the remedies useful in the treatment of cases of cardiac failure might be divided into two great groups —namely (1), those which increase the tone of the heart muscle; (2) those which diminish the work of the heart and peripheral resistance. He agreed with Sir Thomas Grainger Stewart that rest and cardiac tonics (digitalis, strychnine, &c.) were, on the whole, the most useful remedies which we possess. In the time at his disposal it was impossible to refer to details (the efficacy of rest, value of different drugs, &c.). The Schott plan of treatment no doubt had a certain use, but he emphatically protested against the indiscriminate way in which it was, so far as his information enabled him to judge, being employed. He had found in some cases of very advanced cardiac failure, in which gastro-intestinal symptoms were prominent, that rest in bed, complete rest to the stomach, rectal alimentation, and the administration of large doses of digitalis were very beneficial. Of course it was only in special cases, and as a last resort, that this plan of treatment was useful, but he had obtained remarkable results in some very grave and difficult cases. (British Medical Journal, September 19, 1896.)

HEART DISEASE.—Baths and Gymnastic Treatment in.

The following is taken from the conclusions of *The Lancet* Commission :—It may, however, be concluded from the facts stated that Nauheim is favourably situated geographically for the treatment of many cardiac cases ; that it is most fortunate in its possession of richly saline and gaseous thermal waters ; that these have a marked influence for good or for evil, according to skill in their use, upon the vascular system ; that in the carefully regulated and supervised "Widerstandsgymnastik" or resisted movements there is likewise a powerful means of influencing the heart's action, but that, as in the case of other powerful agents, the physician must be content to observe their effect slowly develop, and not by rapid and extraordinary shrinkage in the cardiac area, which can only be attained, as a rule, if attained at all, by imposing a strain upon the patient which it is well to avoid. If these conclusions be correct it is, moreover, desirable, in the interests of the public, of the profession, and of science, that a "system" about which there is absolutely no more mystery than there is in the skilful use of

any remedial means whatsoever, and which, with instruction and observation, should be quite as capable of utilisation by any practitioner as digitalis or any other cardiac agent, should receive consideration from those in this country whose education, opportunities, and status entitle them to speak with authority. Not so checked, in all probability, ethically and physically, it is capable of abuse and mischief. If this adjuvant means of treating cardiac failure becomes discredited, this will be due rather to the extravagant enconiums of too enthusiastic advocates than to the cautious observation and sceptical criticism of those more difficult to convince. Finally, in all investigations bearing upon the points in question it is desirable that there should be a general consent in the methods employed, so that the personal equation of the observer may be eliminated as far as possible, and facts be verifiable by clinical processes in common use. (The Lancet, August 29, 1896.)

NEURASTHENIC ANGINA PECTORIS.

Rendu describes (*Journ. de Méd.*, June 10, 1896) this condition. A man, aged 40, of robust appearance, notwithstanding he had suffered from typhoid, malaria, and yellow fever, but whose health for the last five years had been good, was attacked by influenza. After this he began to suffer from peculiar attacks consisting in a kind of crisis starting in the little finger, extending up the arm, and finally becoming more marked, accompanied by feeling of oppression and agony, with, on some occasions, syncope. After a short period in hospital these attacks became somewhat better, but returned to recur daily. There were no physical signs of either heart or lung disease. Rendu considers the diagnosis in this case one for reflection as to whether it were a case of true angina pectoris or not. In the case in question as there were no signs of cardiac affection, as angina is uncommon up to the age of 40, and as the pain began peripherally, the author was rather inclined to deny its being true angina pectoris. The previous history of influenza would also, he considers, be in favour of the less grave condition; and as the patient also suffered from headache, sleeplessness, and dyspepsia, the conclusion come to was that the case was simply neurasthenic. On these grounds the man was treated, with the result that the attacks rapidly subsided, and the general health was restored. (British Medical Journal, September 12, 1896, Epitome par. 212.)

ROENTGEN RAYS AND THE HEART.

Dr. Benedict, of Vienna (*Wiener medizinische Blätter*, October 29, 1896), finds by "X" ray illumination that the apex approaches the base of the heart in systole, so that there is no apex impulse

in Skoda's sense, but at most a lateral systolic apical stroke. The ventricles are not entirely emptied at each systole, but always retain a considerable amount of blood; nevertheless the 4,000 heart-beats to the hour carry fresh blood enough into the arteries. On deep inspiration, the normal heart rises from the diaphragm, so that an appreciable interval is visible between them. Such examinations are most satisfactory if made on young and thin persons, and they do no harm unless they are made improperly or too often. (New York Medical Journal, November 21, 1896.)

SUTURE OF THE HEART.

Cappelen reports the following case:—A man, aged 24 years, had some hours before admission received a stab-wound in the left side. He went home alone, and about one hour afterwards was found lying in a pool of blood. On admission to the hospital he was found unconscious; the pulse could not be felt and no heart impulse could be felt, although heart sounds could be heard to the right of the sternum. In the fourth left intercostal space, in the mid-axillary line, parallel with the rib, was a punctured, non-bleeding wound, about one inch in length. After a camphor injection the patient began to breathe and a pulse could be felt. The left side of the chest did not move on respiration. Under chloroform narcosis the fourth rib was resected; the pleural cavity was found partially filled with blood and compressing the lung. After evacuating the blood the lung dilated and was found not to have been wounded. On resecting the third rib a wound was found about one inch in length in the pericardium. The sac was filled with blood, and by enlarging the wound, a wound was found in the left ventricle, about two centimetres in length, from which all the hemorrhage came. The wound was sutured, after which the hemorrhage ceased. The heart was sutured with difficulty on account of the frequent pulsations. The pulse after the operation was very quick and feeble, but improved after a subcutaneous saline injection. The patient died two and a half days after the operation. (Boston Medical and Surgical Journal, August 13, 1896, p. 174.)

AFFECTIONS OF THE RESPIRATORY SYSTEM.

BRONCHIECTASIS.—Treatment by Creasote Vapour.

Dr. Brian Dobell relates a case successfully treated in this way:—After a fortnight of the ordinary treatment, which did not produce any marked improvement, it was determined to try the inhalation of the vapour of coal-tar creasote described by Dr.

Arnold Chaplin in the *Brit. Med. Jour.*, June 22, 1895. [See *Retrospect*, 1895, vol. cxii, p. 231.] A small room, connected by a porch with the hospital, was used, the fireplace, window, and door being rendered as air-tight as possible, and the creasote vapourised in a metal dish over a spirit lamp standing on the floor. The fumes soon filled the room completely. The patient was provided with plugs for the nose and watch-glasses for the eyes, as recommended by Dr. Chaplin. Although ten minutes was the limit of the patient's endurance on the first day, owing to the violent paroxysms of coughing and nausea produced by the vapour, yet he soon got used to it, and in the course of a day or two was able to stay in the full time, one hour, with very little discomfort. The beneficial effect was immediate. After the first inhalation of ten minutes the cough was improved, the expectoration and breath less foul, he slept better, and the temperature, which had been rising steadily for a day or two, began at once to fall. On July 17, as his temperature had been normal, and there had been little or no cough or expectoration for at least a week, the daily inhalation was stopped, and between this date and his discharge on July 24 only two more were given. There has been no return at all of bronchiectatic symptoms, and he has continued steadily to gain in strength. He was last seen on September 11, when his weight was 10 st. 5 lbs.; he was doing a hard day's work as a labourer, and, according to his own account, was as well as he had ever been in his life. The rapid way in which the antiseptic properties of the creasote vapour were able to overcome a putrefactive process which had existed in all probability for at least a year seems to me to make the case one of sufficient interest for publication. (British Medical Journal, June 20, 1896.)

BRONCHITIS TENT.

The first remedial agent to which I wish to call your attention is the so-called bronchitis tent, an apparatus which can be readily improvised in any household, and which will give your patient great comfort in many conditions in which the respiratory passages are dry or in an irritated condition. It will prove useful in the treatment of ordinary spasmodic croup dependent upon a catarrhal condition of the child's larynx, which may be exacerbated by the fact that the child sleeps in a room heated by means of a furnace, the hot air of which is not only abnormally dry, but often laden with dust. It will prove of value in the treatment of persons who have been exposed to irritating fumes or gases, and who, as the result, are suffering from inflammation of the respiratory passages. In the early stages of bronchitis in children and adults it will do much towards modifying the severity of the cough and the inflammation

in the bronchial tubes, and in catarrhal and croupous pneumonia and whooping-cough it will in many instances prove an invaluable aid to the other measures which you will naturally institute. (From a clinical lecture by Dr. H. A. Hare, Therapeutic Gazette, November 16, 1896.)

COUGH, THE EXPECTORANT.

Dr. Thompson, in an article on acute bronchitis, makes the following remarks:—The expectorant cough has certain characters which, by a little practice, we can learn to recognise without any difficulty, and as this is a matter of much practical importance I would point out, first, that every irritant cough, no matter what its origin, whether in the respiratory tract itself or outside of it, always consists of separate sounds which are not linked together. They rather consist of a series of hacks, like the separate sounds of the blows of a hammer, which, however loud or repeated, yet remain separate sounds. An expectorant cough, on the other hand, invariably consists of closely linked sounds, each act of the cough being joined to that which precedes and that which follows it, and which continue in a connected chain until the cough terminates with an expectoration into the pharynx. Moreover, an expectorant cough can not be stopped when once it is started until it ends in expectoration; an irritant cough, on the other hand, can be suspended by an act of the will for a time at least. (New York Medical Journal, May 16, 1896.)

EUCAINE.

Cocaine has been so extensively used in the past in nasal and laryngeal affections that any addition to our therapeutic agents which promises to act in the same way and to obviate its dangers will be welcomed. Eucaine, a synthetic cocaine, is being largely used instead of the older drug. Professor Charteris has drawn further attention to the important fact that its lethal properties are much less. The drug is largely being used as a local anæsthetic, and so far it promises well.—*Proceedings of the R.S., Edin.*, 1896. (Glasgow Medical Journal, December, 1896.)

HEMOPTYSES.—Treatment.

Hemorrhages taking their rise in large vomicæ sometimes take on a fulminant course and may rapidly produce death. Hemoptyses coming from a lung of which the greater part is undergoing softening are equally formidable, although they do not generally have as rapid a course as the preceding variety. In both of these two forms of hemoptysis it is necessary to act rapidly and energetically. As in these cases we generally have to do with patients already accustomed to opiates, we are obliged

to administer morphine in large doses—one-third of a grain, at first every hour, then every two hours, till a marked sedation is produced. A large sinapism may be applied to the front of the chest and an ice-bag to the affected side. Dry cups and vesicatories have been recommended. To immobilise that half of the thorax which corresponds to the lesion, long imbricated strips of diachylon may be applied. In desperate cases we may resort to constriction of the limbs. We thus obtain in a certain number of cases cessation of the pulmonary hemorrhage, which is replaced by black clots. This expectoration may last several weeks. During this time the patient should remain in bed and be kept under the influence of narcotics. (From a leading article in the Boston Medical and Surgical Journal on Dr. Skreinka's paper, October 29, 1896.)

LARYNGECTOMY.

Mr. E. Ward (Leeds) described the main feature of the operation, which he had practised in 3 cases, as the complete shutting off of the wound from the mucous canals opening into it. This method, in favourable cases, resulted in union by first intention throughout the whole extent of the wound. No preliminary tracheotomy was required where not already rendered necessary by urgent dyspnœa. The first part of the operation was carried out on the ordinary lines, the larynx being, in preference, separated by division of the crico-tracheal membrane and dissection from below upwards, enucleation of the upper part being thus facilitated. In cases of intrinsic disease the opening into the pharynx need not be more than a small vertical slit. After the larynx had been removed a large tube was passed from the mouth into the stomach, and the cut edges of the pharynx were carefully brought together over it by closely-set sutures of fine silk, the pharyngeal wound being entirely closed. Then two half-discs of skin were cut out of the edge of the flaps opposite to the tracheal aperture, which was closely stitched to the circular opening thus made, and the skin wound was closed by suture throughout. Drainage-tubes were inserted at each end of the cross incision at the upper part. By this method of closing the wound the trachea and pharynx were completely shut out from it, and the trachea was so held open that no tracheotomy tube was required. The œsophageal tube was removed or left *in situ* for feeding, according to the requirements of the case and the difficulty with which it was passed. Three cases in which the operation was performed were related. In 2 (a man, aged 64, with epithelioma, and a man, aged 42, with dyspnœa and dysphagia) it was successful; in the third (a child with laryngeal papillomata) the patient died sixty hours after the operation. Mr.

Ward claimed for this operation (1) that it would reduce the mortality of the operation; (2) that it would shorten the convalescence; (3) that it would add immeasurably to the comfort of patients during convalescence and after recovery; (4) that it would justify attempts at radical treatment in some cases in which this was at present considered inadmissible. (British Medical Journal, May 16, 1896.)

LARYNGITIS, CATARRHAL.

The following is taken from Dr. C. C. Rice's paper:—(1) There are two ordinary types of catarrhal laryngitis, the one following and dependent upon nasal obstruction, or the condition known as "hypertrophic rhinitis," and the other a laryngitis sicca, which is an extension downward of an atrophic rhinitis and a dry pharyngitis; and that in these two processes the same pathological condition exists, from the commencement of the nose to the bronchial tubes. (2) We occasionally see laryngeal disturbances which from their appearance might belong to one of these two ordinary types, but the significant point is that they are present when the nose and pharynx are in excellent condition; or, still again, that the laryngeal disorder, although in kind like that of the nose, is in degree much greater, which is the reverse of the usual condition. (3) There are several disturbances of the larynx, commonly classified under the general term of "catarrhal laryngitis," which seem to bear little or no relation to a previously existing nasal or pharyngeal disease, and, as they are observed commonly in singers or public speakers, they are undoubtedly caused by an over-use of the voice and an improper method of breathing and tone production, since they are greatly improved by proper instruction in breathing and singing. (New York Medical Journal, Oct. 3, 1896.)

LARYNX, VARICELLA OF.

M. Marfan and J. Halle (*Medical News*, September 5, 1896, No. 10, *Revue mens. des malad. de l'enfance*, January, 1896) report two cases of varicella of the larynx:—(1) A boy, three years of age, was suddenly seized with great dyspnœa and paroxysms of suffocation. Tracheotomy was performed on account of cyanosis. After injections of antitoxin (under suspicion that the case might be diphtheria) a typical eruption appeared on various portions of the body. Breathing soon became normal and recovery followed. (2) A child, aged nine months, with typical eruption over the greater surface of the body and with marked stridor and difficulty of breathing. Antitoxin was injected, notwithstanding the negative evidence of diphtheria. Broncho-pneumonia and copious diarrhœa followed, and death was not long delayed. The autopsy revealed a circular, shallow

ulceration about the size of a pea on the posterior part of the right vocal band, probably a ruptured vesicle. [It is stated that statistics of laryngeal varicella furnish but one recovery; nevertheless, the writer of this compilation remembers several cases of recovery in which his help had been solicited in an endemic in Philadelphia more than 25 years ago. It is also stated that stenosis of the larynx in varicella may at times be confounded with diphtheria, and that a bacteriological examination will serve to distinguish the two. This would be in the presence of diphtheria and the absence of the eruption on the surface. (Dr. Solis Cohen's summary in the American Journal of the Medical Sciences, November, 1896.)

LUNG, ABSCESS OF.

Dr. E. L. Luther records a case of a man 27 years of age who had been ill for six weeks with cough, emaciation, and profuse purulent expectoration. Night sweats were present, the left chest was retracted, and dulness was marked all over the left lung, but especially at its base, where breath sounds were absent. The temperature was 103° F. An incision was made over the seventh left rib midway between the spine and the axillary line and a portion of the rib resected. The pleura was adherent and the lung broke down under the pressure of the finger and an abscess was opened, half-a-pint of pus and broken-down lung being evacuated. Drainage-tubing was inserted and removed in a fortnight and the patient made a perfect recovery. (The Lancet, October 17, 1896.)

OXYGEN INHALATIONS IN LUNG AND HEART CASES.

Oxygen inhalations were used in six cases with varying degrees of success, and it is most probable that the two cases that recovered would not have done so had these inhalations not been administered. [The details of six cases are given, three (2, 4, and 5) of acute pneumonia, two of cardiac failure (3 and 6), and one of traumatic pneumo-thorax (1). Cases 4 and 5 recovered.] From these few cases it is evident that oxygen can do much in giving relief to patients suffering from certain severe forms of dyspnœa, but unfortunately it cannot be relied on on every occasion. On the whole I think there are very few cases of uncomplicated pneumonia which would be fatal, even if of the worst type, if oxygen, bleeding, and hypodermic medication were used in time. It seems to me that the most satisfactory results from oxygen inhalations will be obtained in cases of dyspnœa of purely intrapulmonary origin, and that it is often most desirable to bleed coincidentally with the inhalations if no spontaneous depletion, such as epistaxis or diarrhœa,

has taken place. As regards medicine in these cases, I have great faith in the hypodermic administration of digitaline, strophanthine and strychnine, at intervals according to results obtained. It is difficult to estimate how much of a drug is absorbed by a stomach under such conditions, and though ammoniacal and alcoholic stimulants may be given in this way, the sheet-anchor is hypodermic medication. (From Dr. Christian Simpson's paper in the Medical Press and Circular, Oct. 7, 1896.)

PHTHISIS.—Prognosis in.

Dr. Pollock (*Practitioner*, April, 1896) says that the progress of phthisis is influenced by two great classes of factors, viz., (1) general; (2) individual. Under the class of general influences he enumerates age, sex, and heredity. The fatal age of phthisis is between 20 and 30. After 40 the cases are slow. Male cases are generally longer than female cases. Those cases in which heredity plays a part occur early and terminate sooner, and again there is generally a uniform type of pulmonary tuberculosis among those upon whom the same hereditary influence acts. The most important factors, however, are the local or individual factors. Under this heading he first discusses the subject of cavity formation and fibrous changes. The disease thus limited locally tends to great chronicity, and not only such cases, but even those presenting diffuse deposit of tubercle in the lung belong to the class of slowly progressing cases. In such cases, of which the lecturer has observed upwards of 140, the deposit is unilateral, and the patients present none of the typical signs of the chest of phthisis in its movements and measurements. They waste moderately, and the temperature is usually low. The lung shows on examination the superficial situation of the tubercles, and inflammatory exudations are wanting. A third form of this disease, tending to run a prolonged course, is the basic form. Among other prognostic elements, denoting unfavourable course, are continued high temperature as measure of lung irritation, with progressive waste and hæmoptysis. Further, as favourable elements in prognosis are pauses in the disease, by change of the moist to the dry crepitation, with lower temperature and increase in flesh, and when such occur the time for change of climate has arrived, if it be otherwise indicated. From 300 tabulated cases, Dr. Pollock shows that in cavity formation, in emphysematous lungs, and in those with chronic diffuse deposit, the progress is slow, while cases with digital clubbing or cretaceous expectoration or fistula belong also to the class of chronic phthisis, though generally terminating earlier than those of the first mentioned types. (Montreal Medical Journal, 1896, p. 975.)

PLEURAL EFFUSION, ETIOLOGY OF SEROUS.

In the *Zeitschrift f. klinische Medicin*, Bd. 29, H. 5 and 6, the cause and nature of serous effusions in the pleural cavity are thoroughly discussed. The author of the article, Aschoff, placed before himself three questions:—(1) Is every idiopathic pleurisy, *i.e.*, a serous pleuritis without known cause, tubercular in its nature? (2) Is there such a thing as an acute isolated rheumatic pleurisy, which is to be looked upon as equivalent to a preceding acute attack of rheumatic arthritis? (3) Do serous pleuritic effusions ever contain pyogenic organisms without later becoming purulent? Bacteriological examinations were made of 200 serous exudates, with the following results:—Serous effusions are nearly always free from pus-producing micro-organisms. If the latter are present the exudate will become purulent, except possibly in exudates containing pneumococci. Purulent pleuritic effusions sometimes heal completely without operation. The occurrence of isolated rheumatic pleuritis is questionable—at least it must be very rare. The pleuritic effusions occurring in rheumatism are almost invariably the result of a cardiac lesion. No special benefit has been observed by the administration of salicylic acid. The so-called idiopathic effusions are almost always tubercular. They may, however, disappear perfectly. (Medical News, September 12, 1896.)

PNEUMONIA, CEREBRAL, IN CHILDHOOD.

Von Holdheim (*Deutche med. Wochenschr.*, 1896, xxii, 85). There is a group of acute fibrinous pneumonias of childhood which are ushered in by severe brain symptoms (restlessness, coma, delirium, cephalagia, and vomiting), presenting during the first days the picture of an acute meningitis. The changes in the lungs are often not demonstrable until after the fourth or fifth day. Even the most pronounced changes in the lung tissue frequently are obscured by the nervous symptoms. Henoch believes that many so-called recoveries from meningitis in childhood are due to a mistaken diagnosis, the cases having been fibrinous pneumonias with severe cerebral symptoms. As a differential point he mentions that in a true meningitis the cerebral symptoms are not only present in the initial stage, but continue more or less unabated to the day of death. The author describes five cases of cerebral pneumonias, which appeared in an epidemic form, which were, with one exception, brought to the Krankenhaus Friedrichshain from the same district of Berlin. In one of these cases there was no positive diagnosis possible during the first six days. Abnormal temperatures, facial expression, coma, delirium, grinding of teeth, all pointed towards meningitis, until, on falling of the temperature, the lung symptoms came

to the fore, and the diagnosis of a cerebral pneumonia was assured. The site of infiltration in all of the five cases was with preference in the right lung. Pneumonias of the apex, however, usually produce severe cerebral disturbances (Thomas, Jurgensen). The treatment pursued was:—Sherry, daily, one or two baths of the temperature of 35·36° C., with cold douches (for reducing the temperature and stimulating the nervous system; by these measures a visible good result was at once accomplished. (Pediatrics, September 15, 1896.)

PNEUMONIA IN CHILDREN.—Treatment of.

The fever, which in both croupous and catarrhal pneumonia may become excessive, is best relieved, in our opinion, by the use of cool drinks and by tepid or cool sponging; but the actual bath treatment of the fever we have never known to be required, and would regard as being too dangerous and too severe for this class of patients. Neither do we think the employment of cardiac or nervous sedatives is very advisable, unless signs of marked nervous excitement are present, when pure nervous sedatives, such as the bromides, are much to be preferred to those drugs (such as aconite and its relations), which not only quiet the nervous system but also depress the circulation. In these children who, as we have already said, are generally somewhat exhausted by an earlier illness, alcohol has seemed to us to be by far the best stimulant, in the form of good brandy in the dose of from 10 drops to a teaspoonful, according to the age of the child and the response made by the circulatory system to the stimulant. We believe the brandy should always be given diluted with water, and, if the child is old enough, mixed with a little finely cracked ice, as in this way the fever is reduced and the child does not spurn its food, fearing that its taste has been spoiled by the introduction of the brandy, which to it is a disagreeable medicine. Four hour intervals should usually elapse between the doses of brandy, although if active stimulation is required the liquor may be given every two hours for the first 24 or 48 hours of the disease. Simultaneously with the use of brandy by the mouth we believe that in both forms of pneumonia the employment of quinine by the rectum is of the greatest value, and we give by preference either the hydrobromate or the hydrochlorate of quinine in the form of a suppository. This medication should not be repeated more frequently than three times in the 24 hours, and two, three, or four grains of quinine may be placed in each suppository. The more frequent use of suppositories is liable to produce rectal irritation and expulsion of the suppository before sufficient time has elapsed for the absorption of the drug. In regard to

the use of cotton or woollen jackets or of poultices in cases of either croupous or catarrhal pneumonia in childhood, we can state that we have never been able to see that they were of any advantage; on the contrary, they have aided in maintaining a febrile temperature by interfering with the dissipation of heat from the child's body, and have increased its nervous irritability by making it uncomfortable. Indeed, in some instances the profuse sweating thus induced has, we believe, weakened the child and increased its susceptibility to cold. Should there be much irritable cough which disturbs the patient's rest, small quantities of bromide of sodium, rather than bromide of potassium, are employed and the bronchitis tent is resorted to, or at least steam from a kettle of boiling water is allowed to permeate the air of the room. Should any tendency to collapse come on, we believe that belladonna or atropine should be given by hypodermic injection, or by the mouth, according to the severity of the symptoms. In conclusion, we wish to emphasise a point already referred to, namely, the absolute necessity of maintaining from the beginning to the end of the attack a definite plan by which nourishment in an easily digested form is provided for the child. (From a leading article in the Therapeutic Gazette, October, 1896.)

Pneumonia in Children.—Treatment by Cold Bath.

In an interesting pamphlet on the use of the cold bath in the treatment of pneumonia in children, Dr. Buxbaum, assistant to Professor Winternitz, recommends that attention should be directed to the weakness of the heart, the disturbance of the nervous system, and the congestion and hyperæmia of the lungs; at the beginning of the illness the hyperæmia of the lungs is active and during the progress of the case it is passive. The hyperpyrexia rarely requires energetic treatment, and in asthenic conditions a reduction of temperature may even be contra-indicated. Dr. Buxbaum employs baths at a temperature of from 18° to 22° C. (from 64° to 72° F.), combined with cold douches, whereby the fever is diminished. Children present but little resistance to reduction of temperature, and the decrease sometimes amounts to 3° C. after the bath. As a precaution against collapse the bath ought not to last longer than five minutes and is on no account to be continued if the child shows signs of shivering. The improvement of the respiration during the bath is a favourable symptom; the heart's action is strengthened, the resistance in the peripheral parts of the circulation is diminished by the dilatation of the vessels of the skin, and the right ventricle, which is especially endangered, is thereby relieved. (The Lancet, October 3, 1896.)

PNEUMONOMYCOSIS.

The remarkable case of pneumonomycosis recorded by Drs. Arkle and Hinds at the meeting of the Pathological Society on May 5, 1896, had some very interesting features. The patient, an agricultural labourer, aged 22, previously healthy, suffered for four months from an illness characterised by shortness of breath with severe paroxysmal attacks of dyspnœa, in one of which he died. The lungs were found to be in an extreme condition of emphysema and were permeated with a mycelial growth which was almost certainly an aspergillus, and was found chiefly where the structural changes were most marked. The mycelium was characterised by the presence of numerous varicosities, but there was no sign of fructification. It lay to some extent in small cavities. It is needless to say that the disease gets its name on account of the presence of the fungus in the bronchi and lungs. The writers think the fungus was the direct cause of the illness, and support their view by the following considerations:—(1) The absence of any definite causal condition for the emphysema arising from the habits or surroundings of the patient, the man working in the open air in one of the healthiest parts of Sussex. (2) The possible infection from the straw and grain among which the man worked. (3) The results of experiments where the spores of fungi have been injected into the circulation of animals, and the mycelium has been discovered subsequently in the organs, the appearances in the lungs being practically identical with those in this case. (Practitioner, October, 1896.)

RESPIRATORY EXERCISES.

There are the direct or local respiratory exercises, those especially devised for training and developing the respiratory muscles and lungs. Now these direct lung exercises are also applicable, not only to the well, but to those who, from pulmonary lesion or general bodily weakness, are unable to undergo the more active general exercises, for they increase the efficiency of respiration without increasing the need of respiration, creating the "thirst for air." Of course, all exercise is interdicted to those suffering from acute inflammation, the febrile state, or serious hemorrhage. These especial pulmonary exercises are simple and yet efficacious: Standing erect in a well-ventilated room, or wherever there is pure air, with the hands on the hips, and taking long deep inspirations and slow expirations, beginning at the bottom of the chest and filling up, so to speak. This, alone, done several times a day will often materially increase the lung capacity, as I have frequently verified. "Numerous observations," says Lagrange, "prove that it is enough, voluntarily, to take a certain number of deep breaths every day to produce in a short time an

increase in the circumference of the chest which may amount to two or three centimetres." (From Dr. Otis' paper, Boston Medical and Surgical Journal, May 28, 1896.)

SERUM TREATMENT (MARAGLIANO) OF PHTHISIS.

An article by Dr. Regnier in the *Progrès Medical* shows how great a degree of palliation may be afforded even in hopeless cases. One of the three cases reported was of that character, but, even as the patient drifted along to the inevitable fatal termination, his cough was diminished almost to the point of disappearance; the local phenomena, especially the crepitant râles, subsided; no extension of the morbid process could be detected; the sputa, from being massed and nummular, became more mucous in character; the night sweats came to an end; and the appetite and strength returned. Such efficiency of the serum in the palliative treatment of hopeless cases is not only a boon in itself, but a sure token apparently of the curative power of the treatment in cases in which, given a cessation of the progress of the tuberculous process, the lungs have not been so seriously injured that their repair is unattainable. Surely this is a substantial advance in the struggle against pulmonary consumption. (New York Medical Journal, November 21, 1896, p. 685.)

AFFECTIONS OF THE DIGESTIVE SYSTEM.

ABDOMINAL TUMOURS.—Mobility of.

Nothnagel (*Festschrift zur* 100 *jahr. Stiftungsfeier des Med.-Chir. Friedrich Wilhelms-Institutes*) in this article considers the mobility of abdominal tumours under four principal causes:—Respiratory, or the motion of the diaphragm; the peristaltic motion of the stomach and intestines; external pressure; gravity. (1) All organs immediately beneath the diaphragm descend in inspiration and ascend in expiration. Diagnostic errors due to the inspiratory distension of the abdominal wall can only be avoided by experience. In the differential diagnosis of tumours of the liver and stomach the possibility of retaining the tumours in expiration is in favour of the stomach. Respiratory motions may be absent on account of pleurisy, emphysema, or adhesions, or in enormous enlargement of the liver or spleen, by which the contraction of the diaphragm is limited. The mobility of renal tumours, though slight, is important as contrasted with that of retroperitoneal neoplasms. (2) Tumours of the stomach and intestine may be moved by

the peristaltic action of those organs, but the temporary disappearance of a tumour does not permit the conclusion that the growth is in the stomach or intestine. Peristaltic motion is usually limited, although sometimes it causes a considerable excursion. (3) Dislocated organs, such as the liver, spleen, and kidney, are easily moved by palpation unless adhesions have formed. Intestinal tumours are usually very movable, a fact of great importance in distinguishing between these and para-typhlitic exudates. Tumours of the stomach, especially the pylorus, have great passive mobility, but are not much influenced by respiration. Tumours of the gall-bladder, omentum, ovaries, and uterus are slightly movable, but abscess, circumscribed exudates, aneurisms, pancreatic tumours, tumours of the retroperitoneal glands, bones, and undescended testes are immovable. (4) Gravity influences especially tumours of the stomach and intestine. (American Journal of the Medical Sciences, 1896, p. 227.)

APPENDICITIS.—Intestinal Obstruction after.

Dr. Lange presented a patient, 22 years of age, on whom he had been obliged to operate for ileus four weeks after laparotomy for extensive suppurative peritonitis. The cause of the obstruction was a pretty thick but vascular and soft band, which constricted the ileum, being stretched between the mesenterium and the mesocolon ascendens. He had operated on six similar cases altogether, with three recoveries. The other cases terminated fatally from peritonitis, which was already lighting up again after preceding attacks that had been treated after the conservative plan. He emphasised the importance of a timely interference in such cases. Those patients whom he had under close observation had made good recoveries. He also made some remarks about the disappearance of peritonitic adhesions in the course of time. (Annals of Surgery, 1896, p. 376.)

CHOLELITHIASIS.—Iodide of Potassium in.

T. Dunin (*Gezeta Lekarska*, No. 22, 1896) says that, during the last four years, he has tried the internal administration of iodide of potassium (from 5 to 10 grains twice daily) in about 100 cases of gall-stones, and has come to the conclusion that the drug is one of the best remedies for the disease. The most striking effects are obtained in cases where the attacks of hepatic pain, while of a moderate intensity, occur very frequently (daily or hourly), or where the pain is nearly continuous. Such patients usually suffer from sleeplessness and general weakness, and are in the habit of taking narcotics. Their gall-bladder is found to be largely distended and filled with concretions; the slightest

pressure in the corresponding region gives rise to sharp pain. While under the ordinary treatment such cases commonly prove very refractory, under the iodide they often markedly improve in a week or so, complete cure taking place in three or four weeks. In a minority of cases in the class in question, notwithstanding an apparent recovery, the gall-bladder may remain still distended with calculi, and a complete cure ensues only after an alternating treatment with iodide of potassium and Carlsbad springs. In the variety of cholelithiasis characterised by violent attacks occurring at long intervals, the result of the administration of the iodide are much less pronounced. (British Medical Journal, October 24, 1896, Epitome par. 355.)

CIRRHOSIS, BILIARY, IN CHILDREN.

Dr. J. B. Gibbon's conclusions are as follows :—(1) It is a disease which prevails among young children in Calcutta, and probably other parts of India. (2) It is essentially and primarily a disease of the liver-cells which undergo irritation and degeneration. (3) The development of fibrous tissue occurs first within the lobules, constituting an intercellular cirrhosis. (4) At a later period, the portal sheaths are affected and interlobular bands are produced. (5) The proliferative activity of the bile-ducts, which results in the formation of numerous new ducts, is a process having for its object the reformation of the destroyed liver-cells, and therefore curative. (6) The cause of the disease is probably some irritant generated in the stomach or intestines as the result of imperfect digestion or improper food. (The Indian Lancet, May 1, 1896.)

CIRRHOSIS.—Treatment of Alcoholic Hepatic.

While the lines of treatment to be pursued in cases of alcoholic cirrhosis of the liver are pretty much the same whether the viscus is enlarged or diminished in size, the prognosis is much less favourable under the latter than under the former condition. The diet should consist essentially of milk, not less than three quarts being given in the course of the day in divided amounts. Alkaline waters in moderate quantity may be permitted. If the milk is badly digested to each glassful may be added a tablespoonful of the following solution :—℞ Calcium chloride, 15 grains ; water, 3 ounces. Or, with each glass of milk a tablet of the following composition should be taken :—℞ Pancreatin, pepsin, or sodium bicarbonate, āā, 3 grains. When the ascites has disappeared and the digestive functions are improved, in the course of from six weeks to four or five months the severity of the regimen may be mitigated, and white meats, green vegetables, and a small amount of farinaceous food permitted,

while alcohol in any form, red meat, fat fish, and condiments are to be withheld. When possible, the milk-cure may be conjoined with the raisin-cure. Medicinally potassium iodide may be given in doses of from 7½ to 30 grains, if necessary, for a period of several months. This drug is especially useful if the liver is fatty. When the disease is advanced iodism is to be guarded against, as this condition is attended with an increased probability of hemorrhage. If the enlarged liver is painful, and congestive exacerbations occur, calomel is to be administered, either gr. $\frac{1}{6}$ or gr. $\frac{1}{3}$ every morning for several months, or beginning with gr. $\frac{2}{4}$ four times the first day, administering gr. $\frac{1}{4}$ four times a day for six days, then intermitting for fifteen days, and then resuming as before. Meanwhile, the mouth is to be carefully watched for signs of mercurialism. Local revulsion meets the same indications as calomel. Vesication is to be avoided, as the kidneys are rarely healthy. As a diuretic calomel may be employed in doses of from gr. jss to gr. iij four times a day. A combination of squill, potassium nitrate, and potassium acetate may also be employed, or lithium carbonate with potassium nitrate, or a combination of the powder and the extract of squill. As a purgative gamboge may be employed, or euonymin with extract of hyoscyamus, or a combination of magnesia with flowers of sulphur. When, in spite of diet, diuretics, and purgatives, the ascites does not diminish, or occasions dyspnœa, the fluid must be evacuated by puncture, repeated if need be.—*Gaz. Hebd. de Méd. et de Chirurgie*, 1896, No. 28, p. 335. (Medical News, June 6, 1896.)

DUODENAL PERFORATING ULCER.

J. Collins Warren records a case of perforating ulcer of the duodenum in the *Boston Medical and Surgical Journal*, 1896, vol. cxxxiv, No. 19. The patient was a man, 62 years of age, who had suffered six years previously from a sudden, violent attack of abdominal pain, with great distension and constipation. Since that time he had had frequent attacks of acute pain in the pyloric region, for which he usually took a quarter of a grain of morphine. When seen by Dr. Warren the patient had pain and tenderness in the right hypochondrium, extending downward toward the right iliac fossa. The temperature was 100·5° and the pulse 100. The symptoms were thought to be probably due to perforation of the appendix, and, as the patient's condition was unsatisfactory, an exploratory operation was performed. The appendix was found to be normal, but as the exploration was continued in the direction of the right hypochondrium a perforation of the duodenum was discovered. About the perforation was an area of inflammation, and the adjacent coils of intestine were glued together, partly closing off the general

peritoneal cavity. The opening in the duodenum was closed with silk Lembert sutures, drainage was introduced, and the parietal wound was closed. Death occurred on the third day. After operation there were great thirst and vomiting of a brownish substance. There had been no motion of the bowels. (American Journal of the Medical Sciences, 1896, p. 350.)

DYSENTERY.—Treatment of.

By Dr. Testeirn (*La Méd. Moderne*, May 13, 1896). (1) To diminish peristalsis, he used hypodermic injections of morphine, $\frac{1}{12}$ grain every hour, a large mustard plaster being applied over the abdomen at the same time to aid in relieving pain. In other instances he found it of advantage, if there was a tendency to febrile involvement, to apply an ice-bag over the lower portion of the bowel. (2) Intestinal antisepsis was attained by the administration of calomel in the dose of eight grains a day, for two or three days, in association with camphor and opium. As soon as the bilious action of the calomel was established so that the stools showed its effects, it was replaced by doses of bismuth varying from 60 to 120 grains in the twenty-four hours, and this was fortified in its effects by the use of five to ten drop doses of laudanum. These doses of laudanum also facilitated the tolerance of full doses of salol, varying from fifteen to twenty grains in each twenty-four hours. (3) For the local lesion he used injections of creosote made up as follows:—℞ Pure creosote, 15 minims; laudanum, 10 drops; milk or bouillon, 5 drachms. To be added to six ounces of boiled water and given as one injection. Preliminary to this, an injection containing fifteen grains of boric or salicylic acid is administered in order to wash out any fæcal matter that may be in the rectum. The warm creosote injection is retained as long as possible. Three injections a day are usually sufficient, and after each one, if much irritability of the bowel exists, a very small suppository of belladonna and cocaine may be placed in the rectum. If the case is very severe, rectal injections of nitrate of silver solution may be used. (4) For the collapse, hot-air baths or immersion baths of hot water, sinapisms to the limbs, and hot bottles about the patient, are ordered. To sustain the heart, hypodermic injections of sparteine, caffeine, and if necessary of ether, are given. Finally, if the condition is extremely grave, he gives injections of normal saline solution into the subcutaneous tissues; these injections are absolutely aseptic and given in the quantity of half a pint to a pint or more, two or three times in twenty-four hours. (From Therapeutic Gazette, 1896, p. 622.)

DYSPEPSIA, VEGETABLE.

Vegetable foods have a tendency to malfermentation when the salivary ferments are deficient in quality or quantity, and this gives rise to flatulence, heart-burn, eructations, and other disagreeable symptoms, to say nothing of resultant irritations which lead to permanent impairment of the mucous coats of the stomach and intestines. If patients with amylaceous indigestion will follow these rules, the result will be satisfactory:—Omit from the dietary, as far as practicable, pastry, condiments, syrups, and sugars. Chew the food, especially bread and vegetables, slowly and thoroughly. Take 2½ grains of taka-diastase immediately after eating. Avoid any habit which causes the saliva to be expectorated instead of swallowed, for at least an hour after eating. Correct any temporary excess of acidity in the stomach by a dose of bicarbonate of soda. (From Dr. W. A. Walker's paper in the Therapeutic Gazette, September 15, 1896.)

GALL-BLADDER.—Primary Carcinoma of Gall-Stones.

Dr. Kelynack concludes that:—(1) Gall-stones are met with in from 6 to 10 per cent. of all cases submitted to a pathological examination; (2) primary cancer of the gall-bladder occasionally occurs unassociated with gall-stones; (3) in the large majority of cases primary cancer of the gall-bladder is associated with gall-stones; (4) the presence of gall-stones in certain subjects, and doubtless in connection with other predisposing conditions, favours a cancerous development. (The Practitioner, April, 1896.)

GASTRIC PERFORATING ULCER.

Dr. E. Claude Taylor relates a characteristic case, and proceeds as follows:—Suspecting the real nature of the case, I ordered that he should have nothing by the mouth and should continue the hot fomentations. I saw him early next morning, when he said that he had slept fairly well and was feeling less collapsed, but the pain and tenderness remained; his temperature was 99° F. and the pulse was 72. At 8.30 p.m. the temperature was 101°, the pulse 72, full and soft, and the tongue was a good deal coated and dry. He had had two or three teaspoonfuls of weak milk in the afternoon, by my direction, as a test. His bowels had been again moved; as I have mentioned there was no further vomiting. The abdominal wall was less rigid and the pain less severe, but diffused over the whole abdomen; the very tender area remained, but now the important sign of resonance over the liver area was present, and I felt pretty confident of the diagnosis. Thinking that an operation would probably be the only means of saving the patient's life, I consulted Dr. George Findlay, of Brailes, on the matter, and he kindly came over to

see him. By this time it was midnight, and the patient, feeling better, being hardly persuaded the matter was serious, we decided to wait till the morning, and even then to postpone operation so long as the improvement was maintained. I may say that the improvement did steadily continue, the pulse remained good but dropped to about 60 per minute, the pyrexia subsided, and at the end of five days from the onset the resonance over the liver had disappeared, and the pain and tenderness nearly so. I thought an abscess would form, but there has been no signs of one. I have recently seen the man, and though he feels rather weak still he gets about, sees after his business to a certain extent, and except for some flatulence has no gastric symptoms. Of course he was fed entirely by the rectum, only moistening his mouth with a little water which he spat out again. Enemata of milk and egg were injected every four hours, and the rectum was irrigated once a day with plain alkalised water. Though pepsin and hydrochloric acid had to be used for the enemata for the first three days (till I obtained some liquor pancreaticus from London) only one dose was rejected, and the patient seemed to do well on them. The mixture was allowed to digest for a full half-hour and was then given without being boiled, to allow peptonisation to proceed in the bowel. This, then, was a case in which, if it had occurred in a hospital, I should have advised immediate operation, according to the opinion at present held by at least many surgeons. Operative measures, however, having failed in so many instances (three of which I have seen myself), the question arises, What is the best method to pursue, and particularly should an attempt be made to sew up the ulcer immediately its perforation is diagnosed, or should one refrain so long as the patient seems to be getting better rather than worse? I submit this account as indicating that the last course may be the best, but the surgeon would hold himself ready to operate at once if the symptoms were progressive. In my case I believe the absence of the necessity to move the patient more than a few yards after the onset had a considerable influence on his recovery. (The (Lancet, October 10, 1896.)

[See also article at p. 326 of this number of *Retrospect.*]

GASTRIC ULCER.—Treatment by Large Doses of Bismuth Subnitrate.

At a recent meeting of the Medical Society of Munich, a report of which is published in the *Gazette hebdomadaire de médicine et de chirurgie* for July 16, Dr. Cramer stated that he had used Fleiner's method in the treatment of ulcer of the stomach with some modifications. This method consisted in the employment of from 150 to 300 grains of bismuth subnitrate suspended in

6 ounces of warm water, which was to be introduced into the stomach through a tube after previous lavage. Dr. Cramer thought it unwise to employ the tube and lavage, as it might cause accidents, and it was not practicable outside of hospital practice. He simply administered the drug to the patients before a meal and having them in a posture fitted to the supposed situation of the ulcer; that is, if the ulcer occupied the posterior wall of the stomach, the patient assumed the dorsal posture; if the ulcer was found to be in the anterior wall the patient lay on his face in such a manner that the subnitrate could be deposited over the ulcer. At the end of five or ten minutes the water was withdrawn through the tube, and the patient remained in bed for half an hour, after which time he could take his first meal. This treatment had always given very good results at the end of two weeks or a month; in some cases a veritable cure was observed. In depositing the subnitrate on the surface of the ulcer Dr. Cramer thought that it formed a sort of protecting and antiseptic layer, which favoured cicatrisation and protected the nerve fibres against irritation, which was the prime cause of the very acute pains of which the patients complained. The employment of large doses of bismuth subnitrate should, however, be practised very cautiously, as fatal results had often been observed.

Dr. von Ziemssen stated that he had employed this drug for a long time combined with opium with very satisfactory results. Large doses should not be employed, and he considered the introduction of the tube into the stomach to be dangerous in all cases. (New York Medical Journal, August 8, 1896.)

HYDATID OF LIVER.—Surgical Treatment of.

Bolognesi (*Bulletin Général de Thérapeutique*, March 30, 1896) holds that the true surgical treatment of hydatid cysts of the liver consists in direct incision made by the anterior abdominal route, by the transpleural route, or by the lumbar incision. Median or lateral laparotomy should be reserved for antero-inferior or antero-superior cysts. By combining this operation with resection of one or more ribs, some diaphragmatic cysts may be reached if they are not too deeply situated. The transpleural route with resection of the ribs is the best way of reaching subdiaphragmatic cysts which are deeply placed. If this route is employed two or three inches of the median portion of the seventh, eighth, or ninth rib may be resected. There is apparently little danger of pneumo-thorax, if the thoracic wall be firmly pressed upon while the pleura is being cut through. The diaphgram is then incised, and the borders of this incision are held out until the two pleural surfaces are sutured together.

The operation is terminated by the evacuation of the cyst, which is treated by opening, washing, and draining. Lumbar incision allows the surgeon to reach cysts in the posterior and lower part of the liver. Incision and drainage is the only procedure possible for postero-superior or postero-inferior cysts treated by the transpleural or lumbar route. The antero-inferior cysts should also be subject to this treatment when they are adherent, friable, or when the thinness of the hepatic envelope prevents resection. Incision combined with partial excision of the walls is only practicable in the treatment of cysts reached by laparotomy—that is, the antero-inferior and antero-superior cysts. Complete enucleation of the cyst is very exceptionally practicable. When there is found a mass of small conglomerated cysts it is possible that resection of the portion of the liver thus degenerated may be indicated. This should be performed by means of an extra-peritoneal elastic ligature. (From abstract in the Therapeutic Gazette, July 15, 1896.)

LIVER, CIRRHOSIS OF, AND DIABETES.

By Pusinelli (*Berl. klein Woch.*, August 17, 1896). The patient was a man aged 48, at the time when the case was reported. His previous health had been good. In 1887 he suffered from jaundice for 6–8 weeks. In 1888 he first noticed thirst, and 1½–2 per cent. of sugar was found in the urine. After a visit to Carlsbad the sugar disappeared from the urine for some months, but then returned. In 1893, after a severe fright, ascites and jaundice developed, and at a later date œdema of the legs. Great enlargement of the liver and spleen was detected. The abdomen was punctured, and 10 litres of fluid withdrawn. On three subsequent occasions the abdomen was punctured, and after the fourth tapping blood oozed from the punctured wound for some time. After the closure of the puncture opening the ascites did not reappear. The patient improved, and returned to his business; the jaundice gradually disappeared, and the liver diminished in size. The point of greatest interest was the sugar excretion. During the year 1888 the amount of sugar in the urine was 2–5 per cent., but during the time the ascites was well marked the sugar disappeared entirely. After the last paracentesis the glycosuria returned. In a postscript the author adds the termination of the case. After the patient had remained well for 2½ years the dropsy returned, the glycosuria diminished, death occurred, and the autopsy revealed typical cirrhosis of the liver. The cause of the liver cirrhosis was not clear: there was no history whatsoever of syphilis or alcoholism. (From Dr. Williamson's abstract, Medical Chronicle, September, 1896.)

MURPHY'S BUTTON.

Mr. Mitchell Banks read a paper before the British Medical Association on this subject. He described six cases in which the button had been employed. The first case was one of cicatricial stricture of the ileum very close to the cæcum; the stricture was excised, and the button was used; it was unfortunately insecure, and the patient died twenty hours later. The second case was that of a man with a hard mass round the cæcum and a fistula from which came large quantities of liquid fæces. The ileum was joined to the side of the colon. The patent lived for eight months, dying from tuberculosis. The discharge of fæces by the fistula completely ceased. The third case was that of a man with malignant stricture of the descending colon, with much distension. Colotomy of the ascending colon relieved him, but he sank after an attempt to resect the growth. The fourth case was one of vesico-intestinal fistula. The abdomen was opened and the intestines were found much matted together in the pelvis. The involved portion was cut off from the rest of the bowel, its ends closed, and the other portions were joined by means of Murphy's button. The patient recovered from the operation, but died a few months later, probably from tuberculous disease. The fifth case was intussusception in a boy; it proved to be gangrenous and was excised, Murphy's button being used to join the bowel. The boy completely recovered. In the last case a woman had a strangulated femoral hernia which sloughed, and a fæcal fistula formed. The two ends were joined and the patient recovered. The button stayed a long time in the bowel, and its position was observed by means of the Roentgen rays. The button was passed a few weeks later. Murphy's button was chiefly valuable because it was a very rapid method of joining portions of the bowel, and rapidity was the chief thing. (The Lancet, August 8, 1896.)

ORPHOL, AN INTESTINAL ANTISEPTIC.

E. Chaumier (*Therapeutische Wochenschrift*, 1895, 48) says that of all intestinal antiseptics B. naphthol has so far given the best results. Its unpleasant taste, odour, and the burning sensations in the stomach, to which it gives rise, render it difficult of administration, especially to children. Many substitutes, such as betol, salol, and salicylate of bismuth, have been employed, but found unsatisfactory. In the intestinal antiseptic orphol we have a remedy which gives the same good results as are obtained from the use of B. naphthol, without its drawbacks. It does not produce any burning sensation, and is easily administered, even to children. In the diarrhœa of

children it is especially serviceable. The dose varies from 1 to 5 grams per diem for children and infants. It may be given either with milk or honey. The noticeable good effects in these cases are that the stools lose that fœtid odour, watery character, and green colour. The dose for adults is from 5 to 10 grams a day. Good results have been obtained from its administration in the diarrhœa of phthisis and typhoid fever in adults. In phthisical patients the colicky pains have been known to vanish, the number of stools to diminish, and the appetite to improve considerably by the use of orphol. (Medical News, October 24, 1896.)

PERFORATION IN TYPHOID FEVER.—Successful Operative Treatment.

Dr. F. S. Watson (*Boston Medical and Surgical Journal*) reports the case of a man, 28 years of age, who, in the seventh week of typhoid fever, was suddenly seized with severe pain and great tenderness of the abdomen, accompanied with a sharp rise of temperature. When seen by the author twelve hours later there were present signs of beginning collapse. The abdomen was opened by a small incision, the peritoneum found to be thickened, and a loop of the small intestine was attached to the abdominal wall by recent and delicate adhesions; in the centre of the adherent area there was a perforation of the intestine with a ragged border, and of the size of the end of thumb; from this fæces were oozing. There was a localised, but no general, peritonitis. The perforated knuckle of the bowel was drawn out of the wound, the edges of the intestinal ulcer were excised until sound tissue was gained, and then sutured together with a continuous Cushing suture of fine silk. No other ulcers were found, and the bowel was returned and the abdominal wound closed. There was a good deal of shock, but the patient rallied soon, and convalescence was uninterrupted. This the author believes to be the sixth successful case of laparotomy for perforating typhoid ulcer.—*International Journal of Surgery*, July, 1896. (Therapeutic Gazette, October, 1896.)

PERITONITIS, SUPPURATIVE, CURED BY LAPAROTOMY.

Suppurative encysted peritonitis is often caused by laparotomy, not so the generical purulent form. Jaboulay (*Province Médicale*, May 2, 1896), has operated upon 13 cases of the latter, with 3 successes. The general condition of the patient was good in every case which had a happy termination. The operation consisted simply in opening the peritoneum and draining it by several rubber tubes. Manipulation of the intestines was carefully avoided, and no lavage was employed. The wound

was lightly stuffed with gauze and left open. This same course of procedure was adopted in all cases, however caused, and even in the presence of fæcal matter. (Medical News, September 19, 1896.)

RECTUM.—Sacral Method of Operation.

In rectal cancer the sacral method has to compete with the old method of excision on the one hand, and with the operation of colotomy on the other, and in both cases it will compete with success. Colotomy is only permissible when the disease is so extensive that it cannot be removed, and when serious obstruction exists; and excision by the old method is to be reserved for cases in which the cancer is limited to the anus. Under all other circumstances removal through a sacral incision would appear to be decidedly the best measure. It possesses the following advantages:—(1) It ensures the recognition of the limits of the disease, and enables us to get as far as possible beyond them. (2) It renders the complete control of hemorrhage comparatively easy. (3) It affords access to the tissues between the rectum and sacrum, and gives facilities for clearing away infiltrated glands and lymphatic vessels. (4) It leaves the sphincter and levator ani muscles uninjured in the majority of cases, and allows the patient to have considerable control over the action of the bowels. In all these respects it contrasts favourably with the ordinary method of excision, which does not allow the upper limit of disease to be precisely determined, does not facilitate the rapid and complete control of hemorrhage, does not give access to the presacral tissue, and does not give the patient any chance of retaining control over the passage of gas and fæces from the bowel. The chief drawbacks to the sacral operation is its greater severity; but this is more apparent than real, and is far outweighed by the substantial advantages which it possesses. The sacral method may therefore be regarded as the best method of extirpating a large number of rectal cancers. (From Mr. John Campbell's paper, British Medical Journal, October 10, 1896.)

STOMACH AFFECTIONS.—Glycerine in.

By Sir James Sawyer. Some years ago Dr. Sydney Ringer recommended, I think in one of the medical periodicals, the administration of glycerine by the mouth in certain affections of the stomach. I regret a reference to his paper is not near my hand. Acting upon his suggestion, I have since treated many cases of painful gastric digestion, such as are usually attributed to sub-acute or chronic catarrh of the gastric mucous membrane, with glycerine with satisfactory results. So far as I have seen, this employment of glycerine is not widely

extended in professional practice, nor have I noticed further reference to it in our periodicals. The familiar routine seems to be a ringing of changes upon bismuth, alkalies, acids, and digestives. Many cases of gastric maladies of the kind I have indicated yield to glycerine. I give 1 drachm, a drachm-and-a-half, and sometimes even 2 drachms, with a little of some simple bitter stomachic tincture, diluted to an ounce with water, thrice daily between meals. (The Lancet, July 4, 1896.)

SUMMER DIARRHŒA.—Enteroclysis in.

In previous years we have called attention to the value of high rectal injections, gently made, of warm or cold water, in the treatment of summer diarrhœas of infancy which are produced by bad feeding and fermentation of food. The lap of the nurse having been protected by a piece of rubber cloth, the child is laid across upon its back, and by the lifting of one knee of the nurse the buttocks are somewhat raised. The nozzle of a fountain syringe, the reservoir of which contains about a quart of water, is now introduced gently into the rectum, all the air from the tube having been expelled beforehand by allowing some of the water to run through it. The reservoir should be held at a not greater height than eighteen inches or two feet above the buttocks, as a greater pressure will cause the bowel to at once expel the liquid and produce some griping. If desired, a two-way catheter can be employed so that the liquid runs out of the bowel as fast as it runs in. If the temperature of the child is very high, the use of cool water injected in this way will aid materially in overcoming the fever, or hot water used in this way will preserve the temperature in the face of collapse. Whether hot or cold water is used the bowel is cleansed. Should there be much tenesmus and rectal irritability, it will be found that the injection of one or two drachms of sweet oil, containing from one to five grains of iodoform, will allay the irritability of the bowel and permit the injection of water with less bearing down and tenesmus. According to Dauchez, in the *Revue Mensuelle des Maladies des l'Enfance* for May, 1896, this treatment is also of value in the chronic diarrhœa of infancy in which there is a glairy mucous discharge due to an enteritis. He recommends that in addition to ordinary water some extract of rhatany and mucilage of acacia be injected. If there is any doubt as to the purity of the water, it should be boiled before it is injected. In other instances hyposulphite of sodium in the proportion of two drachms per pint of water, to which has been added a little mucilage of acacia, may be given night and morning in this manner, with advantage. Tincture of benzoin may sometimes be given in the proportion of five parts to 300 of water. Often it is well to give small doses of castor oil to

free the bowel of mucus and fermenting material. Dauchez quotes another French author, as follows, in regard to the rules which should govern this treatment:—First, the greater quantity of hot liquid the better. Second, the pressure should not be too strong. Third, the injections should be made slowly. Fourth, the position of the patient should be horizontal. (From a leading article in the Therapeutic Gazette, 1896, p. 528.)

Summer Diarrhœa.—Treatment of.

Reinach of v. Ranke's clinic (*Münch. med. Woch.*, May 5, 1896) observes that the treatment of acute gastro-intestinal affections in quite young infants has two objects:—(1) The prevention of the ill-effects due to the consequent thickening of the blood; and (2) rest for the diseased tract. A third indication may be put down as the providing nourishment in other ways. The first indication is met, though often imperfectly, by stimulants, mustard baths, &c. Monti and Epstein practised with good results the subcutaneous infusion of saline solution. Grawitz showed that the injection of serum produced a thinning of the blood. With this object the author has treated 15 cases of infantile diarrhœa with sterile serum obtained from calves. Only the worst cases were selected for this purpose. Of the 15 cases 4 died, but 2 of these had, in addition to the gastro-intestinal affection, broncho-pneumonia; 10 to 20 c.cm. of the serum was injected. In one case a measles-like eruption appeared in fourteen days. The age of the infants varied from 14 days to 9 months. The effect of the injection upon the general condition was decidedly good. The collapse temperature rose to normal. Twice fever occurred after the injection, the temperature once rising to 38·5° C. Usually the injection was given in the evening, and on the next morning improvement was noted. No local treatment was adopted. Rice water was given during the first twenty-four to forty-eight hours. The author then refers to recent attempts to inject albuminous bodies subcutaneously. In 20 c.cm. of serum the amount of albumen is small, but perhaps larger quantities of the serum might be used. In 20 c.cm. of serum there is 1·5 g. albumen, and this amount corresponds to 50 g. undiluted cow's milk, and 150 g. mother's milk. The absence of fat could be compensated for by the injection of cod liver oil. A deficiency in the nourishment will, however, still remain. The abstention from feeding by the mouth need only extend over one to two days, so that help ought to be given by the injection of even small quantities of assimilable nutrient material. This treatment is being further investigated in the clinic. (British Medical Journal, July 11, 1896. Epitome, par. 29.)

TYPHLITIS IN CHILDREN.

Mr. R. W. Murray has investigated the subsequent history of 23 such cases. He divides them into:—Class 1—Inflammation of the vermiform appendix, most probable associated with a localised peritonitis. Class 2—A localised peritoneal abscess associated with an inflamed appendix. Class 3—The appendix rapidly become gangrenous or perforated, resulting in general suppurative peritonitis. [The following observations apply to the *first class.*] The ages of these children varied from 5 years to 12 years, the average age being 9 years. The history was usually the following:—For a week or ten days before admission the child complained of pain in the abdomen, and from time to time vomited. The bowels, as a rule, were constipated, though in some instances the motions had been loose and offensive The vomiting continued off and on, and there was loss of appetite and increase of abdominal pain. The legs, especially the right, were drawn up, and any attempt to straighten it caused pain. The tongue was furred, and the temperature ranged from 99° to 102°. There was no very marked abdominal distension, but acute localised tenderness in the right iliac region. The treatment almost invariably adopted was rest in bed, milk diet, fomentations to the right iliac fossa, and an enema or dose of castor oil. The symptoms usually subsided rapidly, and at the end of a few weeks all tenderness had entirely disappeared, and the child was again in its usual health. In six of these nine cases there was no previous history of any similar trouble, but three had suffered from similar attacks, and, in fact, might be called "relapsing cases." A boy of 11 years—the relapses occurred in the older children—was in hospital three times for the same complaint, the last attack being far the most severe. A girl of 12 years was in hospital twice for the same trouble; and in the case of a boy of 10 years there was a history of several milder but similar attacks previous to the one for which he was admitted. In every one of these nine cases there was an accompanying gastro-intestinal disturbance, and the local trouble in the right iliac fossa was, I take it, almost certainly due in the first instance to a catarrhal condition of the vermiform appendix, the swelling of its mucous membrane causing some retention of the morbid secretion, which induced inflammation of the appendix as a whole, together with, most probably, a slight and strictly localised peritonitis. All these nine children have remained in good health since their discharge from hospital, and, as this includes a period ranging from three to seven years, the results must be extremely gratifying to the physicians under whose care they were. (From British Medical Journal, September 19, 1896.)

AFFECTIONS OF URINARY AND GENERATIVE SYSTEMS.

ALBUMINURIA.—Hot Air Baths in.

The *Gazette hebdomadaire de médecine et de chirurgie* for August 27 publishes a report of a recent meeting of the Congrès français de médecine at which M. Carrieu presented a paper on this subject. The author stated that he preferred this treatment to the use of vapour baths and to that of hot baths, which did not produce sweating. The hot-air bath filled two principal indications:—It relieved the kidney by the abundant sweating which it produced, and regulated the organic interchanges. No symptom was produced, except some palpitation and headache during the first baths, which lasted about an hour; sweating was the only symptom that persisted for a greater length of time. The therapeutic effects were manifested by the changes in the urine, the quantity of which diminished on the day after the bath, and a rather intense polyuria which supervened on the following day. The density of the urine was in inverse proportion to its quantity. The urea scarcely underwent any modification. The rate of albumin greatly diminished on the day after the bath, but it increased on the following days, although it did not return to the former quantity. Gradually, however, this diminution became persistent and finally there was complete disappearance of the albuminuria. Hot-air baths, said the author, were indicated in cases of subacute and chronic nephritis in epithelial forms; they were, however, contraindicated in the vasculo-connective forms, and when arteriosclerosis, a skin disease, or a nervous condition existed. (New York Medical Journal, September, 1896.)

CATHETERISATION, ASEPSIS IN.

Grosglik (*Cent. für. Chir.*, 1896, No. 1) says that the mechanical methods employed for the sterilisation of catheters are entirely inadequate. Complete sterilisation can be obtained by the action of hot air at a temperature of 130° C. for one hour, or under steam-pressure for fifteen minutes. Metal catheters may be sterilised in boiling water, but the author cautions against the use of soda in the water, as particles remain attached to the catheter and produce irritation in the urethra. Strict asepsis should be observed both in the patient and the operator; the meatus and external genitalia should be carefully washed in sublimate solution. The greatest difficulty, however, is experienced in disinfecting the urethra. The mucous membrane is the seat of numerous forms of bacteria and they are difficult

to dislodge. Disinfection is necessary in all acute and chronic infections, in which there is complete or incomplete retention of urine or in which there is hyperæmia or lesion of the vesical mucous membrane. To procure this sterilisation a pint to a pint and a half of sterilised water should be injected gradually into the urethra, care being taken to make the outflow easy so that the water will not enter the bladder. The posterior urethra can be disinfected only in conjunction with the disinfection of the bladder.

Frank (*Cent. für. Chir.*, 1896, No. 4) disinfects the different kinds of catheters in formalin-vapour; he hangs them up in a glass cylinder having a sieve-like bottom which fits over a dish containing formalin-pastels. The catheters are completely sterilised after the lapse of twenty-four hours. The use of the catheters disinfected in this manner produces no harmful results. (American Journal of the Medical Sciences, October, 1896.)

CYSTITIS, GRANGRENOUS.

Collins Warren, M.D. (*Boston Medical and Surgical Journal*, June 25, 1896). A married woman of good general health underwent dilatation of vagina for dyspareunia. Cystitis in a mild form had existed for six months, and was worse after the operation. Relieved, she went home, but returned in a month's time much worse. A week afterwards she complained of obstruction to micturition, and, on examination, a foreign substance was seen protruding from the urethra. Under anæsthesia this was gradually extracted, and proved, on microscopical examination, to be the submucous coat of the bladder. Recovery took place gradually. Traumatic cystitis, or interference with blood supply from pressure of a child's head or growth, is the usual cause of this disorder. It is more common in women than men, though more fatal in the latter class. (Sheffield Medical Journal, October, 1896.)

DIURETICS.

Friedrich confirms the statement that great diuresis can be produced by the administration of urea. Where the kidneys were intact seven times the previous amount was excreted in a case of cirrhosis of the liver. Diuretin is reported upon by L. Vintras. He finds that where the kidney disease is primary and the parenchyma much affected, or where much albumen exists, it has little value, but where the disease is secondary, and only the epithelium of the tubules affected, it is of great utility. (The Hospital, October 3, 1896.)

GONORRHŒA.—Treatment with Formaldehyde.

Orloff (*Wratsch*, 714, 1895; *Centralbl. f. d. Krankh. d. Harnu. Sexual-Organe*, B. vii, H. 5, S. 287) details the results secured in the treatment of 10 cases with formaldehyde. Following injections of a 5 per cent. or a weaker solution, the purulent secretion soon became serous, and gonococci disappeared. Unpleasant effects were not observed. As formaldehyde is volatile, it is well always to prepare a fresh solution. Stronger solutions than 5 per cent. are not to be recommended. (Medical News, October 3, 1896.)

GOUT.—Colchicum in.

There is a tendency at the present day to minimise the good effects of this drug, which our fathers regarded as practically a specific in true gout, and to emphasise the ills which may result from its depressant action. I must take my stand with those who hold that colchicum has a remarkable curative power upon acute attacks of gout, and that not only is this effect obtained by means of much smaller doses than are usually given, but also that when given in such smaller dose (℥ v.-xv.) it is but little apt to produce any ill effects, provided that its use is avoided in cases in which the heart's action is exceptionally feeble. (From Dr. A. E. Garrod's paper in the Medical Press and Circular, September 2, 1896.)

GOUTY AFFECTIONS.—Treatment of.

Dr. Murrell (*The Lancet*, June 6, 1896) has successfully treated the acute manifestations of chronic gouty affections by a local application, for which he gives the formula in full. He takes half an ounce of iodide of potassium, dissolves it in half a pint of rectified spirit—methylated spirit is used in hospital practice—adds one ounce of soap liniment, and then half a drachm each of oil of cajeput and oil of cloves. A piece of lint is soaked in this mixture, wrapped round the affected parts, covered with protective, and kept in place by a bandage. It acts as a powerful counter irritant, and the inflammation usually subsides in from 12 to 24 hours. In addition, he not uncommonly gives a drachm of colchicum wine, with 10 grains of iodide of potassium, three times a day. These large doses of colchicum wine induce brisk purgation, sometimes accompanied by vomiting, but they speedily cut short the attack. This mode of treatment is especially useful in cases of robust, full-bodied men in active employment, to whom the loss of a day's work is a serious consideration. In sciatica, lumbago, and rheumatism affecting one joint, the local application of a liniment containing

half an ounce of salicylate of sodium, half a drachm of cajeput, 15 minims of oil of eucalyptus, and half an ounce of soap liniment in 6 ounces of rectified spirit affords prompt relief. (Medical Chronicle, 1896.)

GRAVEL.—TREATMENT OF URIC ACID.

G. Klemperer (*Berl. klin. Woch.*, 1896, No. 33) discusses the medical treatment for the prevention of urinary concretions of uric acid, and the after-treatment to prevent recurrence when such concretions have been removed by surgical intervention:—(1) There must be sufficient diuresis; 1 g. of uric acid requires 7 litres of water for its solution at the body temperature. The patient, therefore, must drink sufficient water. Saline and drastic purgatives should be avoided, because they tend to make the urine more concentrated. If there be constipation water enemata may be used, which not only induce the bowels to act, but often favour diuresis as well. (2) Much sweating and much exercise should be avoided; in this respect the treatment of uric acid calculi and gravel differs from that of gout. (3) The amount of uric acid in the urine should be diminished. Uric acid must not be regarded as merely representing a stage in the production of urea, but as representing a special nitrogenous metabolism. It is, in fact, the result of the oxidation of nuclein, an albuminous substance which is contained in the cell nuclei, and distinguished by richness in phosphorus. To diminish the amount of uric acid in the urine, suitable foods containing little nuclein should be taken, such as milk, cheese, white of egg, bread, and vegetables. Foods such as thymus, liver, and ordinary meats should be taken in moderation only, because they are specially rich in nuclein. The oxidation of the nuclei of leucocytes and other cells of the human body, some of which are of course constantly being destroyed, furnishes perhaps 0·3 to 0·6 g. of uric acid daily. The uric acid excretion is hardly greater when only milk is taken than it is during fasting. After two litres of milk the urine contains 0·5 to 0·6 g. uric acid. After 500 g. of meat the urine of the same man contains about 1 to 2 g. uric acid; after 500 g. of thymus it will contain about $\frac{3}{4}$ g. more uric acid. Brain and kidney cause about the same amount of uric acid to be excreted as ordinary meat does. There is, however, as Horbaczewski showed, no general quantitative relation between the nuclein in the food and the uric acid in the urine, for nuclein may also be excreted as urea, just as uric acid may be when it is taken by the mouth. The difference in different individuals seems to depend on some persons being able to transform the uric acid formed in their bodies more readily into urea than other persons can. The ingestion of xanthin bodies leads, just as the taking of nuclein does, to an

increase of uric acid in the urine; therefore, excess of tea, coffee, and meat extract should be avoided. In regard to alcohol, it is uncertain whether any special influence is exerted on the uric acid excretion. Excessive exercise, according to some authors, increases the excretion of uric acid, and should therefore be avoided. (4) The acidity of the urine should be kept below a certain level, to prevent the precipitation of uric acid. For this purpose a draught containing sodium carbonate (for example, one of the alkaline mineral waters), or a citrate, may be taken in the forenoon and late in the afternoon; the acidity of the urine is naturally diminished in most persons after the midday. (5) Urea may be given by the mouth to increase the solubility of the uric acid in the urine. The solvent action of urea on uric acid was first demonstrated by Ruedel, at Heidelberg, six years ago. Rosenfeld, in Breslau, made therapeutic use of urea for this purpose last year, but Klemperer has employed it for nearly two years in the form of a 5 per cent. to 10 per cent. aqueous solution. He gives a tablespoonful of the solution as a dose, and has obtained satisfactory results. (British Medical Journal, October 10, 1896. Epitome, par. 317.)

PHYSIOLOGICAL ALBUMINURIA.

At the recent French Congress of Internal Medicine (*Gazette médicale de Paris* for August 22) M. Arnozan discussed the question of the existence of an albuminuria having no significance as to the state of the person's health. M. Arnozan stated that certain authors, Senator in particular, admitted that albumin was a normal element of urine, but this opinion was rejected at the present day by the majority of chemists and physicians. Others, such as Capitan, Leube, and Stewart, thought that albumin might exist in the urine accidentally and in a transitory manner, that is to say, that there was a physiological albuminuria independent of all diseased conditions. It was true, said M. Arnozan, that many persons enjoyed good health, and led an active and even laborious life, although there was albumin in the urine; it was a mistake, however, to suppose absolutely that these persons had no defect. It was notable that this albuminuria called physiological was influenced by the same causes, such as menstruation, muscular work, cold baths, and digestion, which influenced the albuminuria known as pathological. Albuminuria might proceed from an alteration of the albumins of the blood, from an affection of the renal circulation, from an epithelial lesion of the kidney, or from an inflammatory exudation discharged at the surface of the canaliculi. But this albumin did not carry with it the characteristics of its origin, and, as it could not give any information as to the extent of the lesions

or as to their degree of curability, it followed that it was only a relative element in prognosis. It assumed, however, a greater prognostic importance when the study of the formed elements of the blood in the urine was joined to that of the urinary toxicity. M. Denigès, said M. Arnozan, had shown that when leucocytes existed in albuminous urine their number seemed to vary with the quantity of albumin eliminated. On the other hand, it was known that the less toxic the urine was the graver was the prognosis. Finally, we must also take into consideration the function of the kidney as a gland of internal secretion. Researches, however, on this point, said M. Arnozan, were as yet insufficient. (From a leader in the New York Medical Journal, September 12, 1896.)

TUBERCULOSIS, PRIMARY, OF THE KIDNEY.

Amongst early symptoms great stress by Dr. Hamil (*International Medical Magazine*, January, 1896) is laid on incontinence and urinary irritability. Subsequently pain and hæmaturia are present. The pain may be paroxysmal, due to the passage of tuberculous matter down the ureter; and hence renal colic may be simulated. A tumour was observed in 23 of the 55 cases. These tumours were said not to move with respiration; if so, this was probably due to the mass becoming adherent to the parietes, as renal tumours move quite perceptibly with respiration, although not so mobile as hepatic, gastric, splenic, and omental tumours. Constitutional symptoms, such as sweats, emaciation, anæmia, and marked pyrexia were late in developing. The average duration of the disease was from six months to three years. Occasionally, but rarely, a cure results from extrusion of caseous masses. Hamil considers the surgical treatment of this disease in children hopeful, as in nine nephrectomies recovery occurred in five, improvement in one, and death from the operation in three cases. None of these cases were early ones; and Hamil considers that if the disease were diagnosed earlier by a more complete examination of the urine for bacilli, &c., the outlook would be good, since in so many cases the lesion is limited to the kidney. (From Dr. Rose Bradford's Review in the Practitioner, 1896, p. 293.)

URÆMIC DYSPNŒA.

Uræmic dyspnœa may be unattended by any other uræmic symptom; that it may usher in loss of consciousness from uræmia or precede a hemorrhage which may, and generally does, cause at the same time a profound and frequently lasting, not to say lethal, coma. On seeing our patient we first ascertained that there was symmetry of phenomena on the two sides of the body; that there was no rigidity of one side of the

face or body ; no one-sided relaxation of limbs ; every limb fell with the same atonic weight ; the knee-jerks were present and easily obtained. There were no twitchings and there had been no convulsions. We had thus very little hesitation in saying that the loss of consciousness was not due to hemorrhage. The urine was only slightly albuminous. The case is a splendid example of the fulminant form of apoplectic uræmia. It is exceedingly rare to find very contracted pupils in unmolested cases of uræmic coma, and the opposite condition of extreme dilatation has also not been seen by the writer. But it may be held that sometimes the pupils look as if some eserine, and sometimes as if some atropin, had been instilled. My own experience is certainly in favour of the view that the pupils are generally about normal in size, and that they react to light. Sir William Roberts passes the statement that, as a rule, in uræmic fits—presumably not simple apoplectic coma—the face is nearly always deathly pale and the breathing easy. On this point some accurate statistics are surely needed. (From Dr. Angel Money's paper in the Australian Medical Gazette, May 20, 1896.)

GENERAL SURGERY, AND AFFECTIONS OF THE BONES, JOINTS, &c.

ANÆSTHESIA.—Schleich's.

The use of infiltration anæsthesia is necessarily confined within a restricted area, and no one will claim that it is in any sense a substitute for general anæsthesia; still its advantages are definite in its own sphere. There is no danger from toxic causes, as in cocaine anæsthesia, or general anæsthesia induced by chloroform, ether, &c., and hence it is valuable as in the case quoted above, where general anæsthesia is inadmissible or more than usually hazardous. (From Dr. Wilton Love's paper in the Australian Medical Gazette, August 20, 1896.)

[See also *Retrospect*, cxiii., p. 288.]

BURNS AND SCALDS.—Treatment by Picric Acid.

The method is well known in France, where it has been extensively used by Professor Thièry, whilst Dr. Filleul and Dr. Papazoglou have done their best to disseminate a knowledge of its value. The solution of picric acid is made by dissolving a drachm and a half of picric acid in 3 ounces of alcohol, which is then diluted with two pints of distilled water, or more accurately : Picric acid, 5 g. ; alcohol, 80 g. ; dissolve ; add 1,000 g. of distilled water. This is a saturated solution of

picric acid. The clothing over the injured part should be gently removed, and the burnt or scalded portion should be cleaned as thoroughly as possible with a piece of absorbent cotton wool soaked in the lotion. Blisters should be pricked, and the serum should be allowed to escape, care being taken not to destroy the epithelial surfaces. Strips of sterilised gauze are then soaked in the solution of picric acid, and are so applied as to cover the whole of the injured surface. A thin layer of absorbent cotton wool is put over the gauze, and the dressing is kept in place by a light linen bandage. The moist dressing soon dries, and it may be left in place for three or four days. It must then be changed, the gauze being thoroughly well moistened with the picric acid solution, for it adheres very closely to the skin. The second dressing is applied in exactly the same manner as the first, and it may be left on for a week. The great advantages of this method of treatment are: First, that the picric acid seems to deaden the sense of pain; and, secondly, that it limits the tendency to suppuration, for it coagulates the albuminous exudations, and healing takes place under a scab consisting of epithelial cells hardened by picric acid. A smooth and supple cicatrix remains, which is much superior to the ordinary scar from a burn. (From Mr. D'Arcy Power's paper in the British Medical Journal, September 12, 1896.)

CHLOROFORM ANÆSTHESIA.—Arrest of Heart's Action and Respiration.

Waterhouse and Gibbs relate a case in which death was averted by bleeding from the internal jugular vein. They say that they feel convinced that the bleeding from the internal jugular vein, by relieving the distension of the right heart, was the main factor in bringing about the recovery of the patient from an apparently hopeless condition, and they consider that the treatment adopted with such a satisfactory result in the present instance should be tried by surgeons in similar cases where artificial respiration alone has proved insufficient to revive the patient. The question as to which vein the surgeon should open depends much upon the site of the operation, but the essential point seems to be that the vessel selected be as large and as near to the heart as possible, in order that the issuing stream of blood may be of considerable volume and the relief to the distended heart rapid and thorough. During the anæsthesia, they state that the administrator paid special attention to the respiration, and also kept his finger on the temporal pulse. The pupil was moderately dilated, never contracted, nor very widely dilated, except during the period of cardiac and respiratory failure. The conjunctival reflex was lost early.

The stage of excitement was short, and unaccompanied by struggling. The vagus nerve was not exposed during the operation. Immediately before the three attempts at retching which preceded the alarming symptoms, the pulse and breathing were good, and during the few seconds which elapsed between the retching and the cardiac arrest, only a small amount of chloroform vapour could have been inhaled, as the mask was only sprinkled (not saturated) with the anæsthetic. During the whole period of the administration of the anæsthetic (forty minutes) rather less than two ounces of chloroform (Duncan and Flockhart's) were employed. (From a paper in the British Medical Journal, July 18, 1896.)

DISINFECTION OF THE SKIN.

By Dr. Lauenstein (*Arch. f. klin. Chir.*, bd. 53, hëft i.). Stitches which include the whole depth of a wound are unsafe, since infection may follow their course. The deeper parts of the wound should be closed by buried sutures; and the skin stitches should be either percutaneous, thus avoiding the ducts of the sebaceous glands in which the germs are particularly apt to be found, or should include only the skin, and should be made of some smooth, non-absorbing substance, such as silver wire or Chinese silkworm-gut, in preference to cat-gut, which by swelling and becoming gelatinous affords an admirable medium for the propagation and diffusion of the germs. The impossibility of skin-disinfection also constitutes a strong reason for omitting drainage whenever this is possible, and for keeping the skin surface surrounding the wound dry. From an abstract in the Therapeutic Gazette, October 15, 1896.)

FEMUR, INTRACAPSULAR FRACTURE OF.

Dr. T. G. Morton concludes that :—(1)Intracapsular fracture of the femur does not require, as the rule, any modification in the principle of treatment of fracture of the shaft of the bone. (2) Treatment by rest in bed, extension, and fixation can properly be used in all cases except where individual reasons exist, or emergencies arise in the course of the treatment, which demand some modification. (3) In aged persons, when the injury has resulted from a trivial cause, with apparently no special violence and due to disease of bone, expectant treatment directed to the patient's general condition, as a rule, is all that can be adopted. (Annals of Surgery, July, 1896.)

FORMALIN TREATMENT OF WOUNDS.

Schleich *Therapeut. Monatsch.*, February, 1896) asserts that with the help of this material every acute suppuration can be stopped in twenty-four hours, and every wound can be made to heal

aseptically without further trouble. He has proved this by its use in 120 cases of acute suppuration, 93 aseptic wounds, 4 compound fractures, and 2 deep wounds of the scalp. In his experiments the principles of aseptic surgery were in all respects observed, except as to the wounds, which were only mechanically cleansed and thoroughly rubbed with the powder. In every case suppuration was stopped in twenty-four hours, and even the compound fractures healed without any fever. In fresh wounds the powder made with the blood a firm aseptic scab. In order to be of service the powder has to be brought into contact with sound or inflamed tissue. In the presence of necrotic masses, or in the specific inflammations of syphilis and tuberculosis, it has very little effect. In order to produce a continuous supply of formalin vapour for the treatment of ulcers, &c., it is possible to digest the formalin by a pepsine-hydrochloric acid solution. The formalin-gelatine powder is first dusted on the wound, and then covered with a compress wet in a watery solution containing 5 per cent. of pepsine and ·3 per cent. of hydrochloric acid. The powder is made by drying 500 grams of purified and dissolved gelatine in the vapour of 25 drops of formalin. The gelatine is then rubbed to a powder and preserved in the presence of a single drop of formalin solution. (Medical News, June 27, 1896.)

HIP, TUBERCULOUS DISEASE OF.

Before all things it must be remembered that tubercular coxitis is a disease characterised by chronicity, the cases occurring with an acute onset being exceedingly rare. Therefore, in practically all cases which can be recognised as incipient hip disease will be found a certain amount of atrophy of the limb, thigh and calf, dependent on trophic disturbance on the one hand, and on disuse due to instinctive protection on the other. This atrophy, in connection with certain limitations in the movements of the limb, more especially in the directions of inward rotation, abduction, and hyperextension, are the symptoms most to be depended upon. When these limitations of movement are accompanied by pain on pressure in the groin and behind the trochanter, and by pain in the knee, especially pain referred by the patient, if old enough, to a point over the inner condyle, and at the same time when a small amount of atrophy can be determined, the diagnosis of commencing hip joint disease is comparatively safe. But where no atrophy is present, and the process has not demonstrated chronicity, the presence of pain alone and limitation of movement are insecure foundations upon which to base a diagnosis of incipient hip disease. It must be remembered these symptoms can be present as a result of a wrench or sprain, as well as in some of the other conditions

already mentioned as affecting the hip joint. In such cases the safe course is to put the patient at rest in bed, and trust to time to make the diagnosis clearer. (Pediatrics, August 15, 1896.)

MORTON'S DISEASE.—Treatment of.

In all instances evidences of rheumatism, rheumatoid arthritis, and gout should be sought for and treated with the usual, but frequently inefficacious, constitutional remedies. The acute attacks of pain are relieved by removing the boot and soaking the foot in hot water. Bradford and Lovett suggest the alternate use of hot water and ice. But these applications I have not tried, and so far as ice is concerned, I should hesitate to use it in a gouty case. The application of the oleates of morphine and atropine temporarily relieve the pain. In most cases relief may for a time be obtained by grasping the instep and sole, or by tightly compressing the bases of the metatarsal bones with a flannel bandage. The first thing is complete rest of the foot for two or three weeks; then some walking may be allowed. But no boot should be worn for a time, merely a canvas or rubber shoe with a bandage around the proximal ends of the metatarsal bones. When all pain has subsided the following description of boot should be worn—namely, one with a high instep and valgus pad if flat foot is present, with a heel coming well forward beneath the instep, and of moderate height. The boot should also be made to fit closely over the instep, and be broad in the "tread," so as to give plenty of room to the heads of the metatarsal bones, and the soles must be thick. In severe and long-continued cases not relieved by the above treatment, Morton advised excision of the head of the fourth metatarsal bone. But when there is undue prominence of the distal extremity of either the second or third, rather than of the fourth, I should certainly excise that one which could be most plainly felt from the sole, and had the largest corn over it; and this I have done in the case of the second and third metatarsal bones with complete relief. (From Mr. Tubby's paper, British Medical Journal, October 17, 1896.)

SPINE, LATERAL CURVATURE OF.

For the convenience of description in treatment of lateral curvature, cases can be divided into two classes, representing, not different types, but different stages of one condition, which is distinctly progressive. The first class includes cases of such slight degree, in which little or no bony change has occurred, that they present no obstacle to the complete or even over-correction, and are therefore to be regarded as postural curves. The second class includes those cases in which the deformity has

existed so long that definite structural changes have taken place in the bones and ligaments and muscles, and present a distinct obstacle to the complete restoration. In the first class the treatment must therefore be directed to overcome this asymmetrical development, having for its object, first, to bring about a flexibility of the spine, normal in amount and symmetrical in character, so that the trunk may be held with ease in its normal position; and second, to so improve the muscle strength and muscle action that it is held in its normal position without conscious effort on the part of the patient. The first of these is accomplished by exercises designed to stretch the shortened ligaments, and may be accomplished by vigorous body movements, or by exercise aided by mechanical means. The second, by the use of gymnastic exercises, carried out with the body in a corrected or over-corrected attitude. In the second class of cases there exists a marked obstacle to correction, in the more pronounced curve in the spinal column, the change in the shape of the vertebral bones and the ribs, and in the limited flexibility. The object of treatment in these cases is twofold:—(1) To so increase the range of flexibility in the necessary region of the spine that correction to a greater or less degree is possible; that is, to bring about a condition in which the patient can be made straight or nearly so. (2) To then hold the spine and trunk in nearly as possible this condition, whether by means of apparatus or by increased muscle development, or both, while the bones are being shaped and ossification is taking place. (From Dr. E. G. Brackett's paper in the Boston Medical and Surgical Journal, September 3, 1896.)

SYNOVITIS, ACUTE TRAUMATIC SEROUS, TREATED BY ELASTIC PRESSURE.

By Mr. J. H. Marsh. The value of elastic pressure in the treatment of acute traumatic serous synovitis is worthy of more consideration than at present it receives. Many of the surgical text-books recommend cold applications and the immobilisation of the injured joint till the acute stage is over, the treatment by elastic pressure receiving but scanty notice, if, indeed, it is mentioned at all. Having, during the last twelve months, treated a considerable number of cases of acute synovitis following injury, I have come to the conclusion that the method of treatment by elastic pressure, gives in a large majority of cases, the best results, affording a more immediate relief of pain and a speedier cure. By elastic pressure the absorbent powers of the synovial membrane are stimulated, and thus the distension of the joint capsule, which is the chief cause of the pain, is rapidly relieved. By checking mobility,

and affording a firm, uniform, and even support to the injured tissues, it relieves the reflex spasm of the muscles acting on the joint. And, again, by supporting the blood-vessels, further effusion into the joint is prevented. The pressure should be perfectly uniform, gentle, and elastic. All the hollows around the joint should be carefully packed with absorbent or wood wool, or, better still, sheep's wool, which retains its elasticity under pressure. Then several layers should be placed around, the whole extending for some distance above and below the joint, and over all a moderately tight bandage of elastic webbing. There is no need for a splint. The limb may be swung in a Salter's cradle or tied up in a cushion. The dressing should be taken down at the end of twenty-four hours, the joint passively moved, and the pressure re-adjusted. In cases of acute synovitis of the knee-joint following a primary dislocation of a semilunar cartilage it seems desirable to keep the joint fixed for four or five days in order that, if possible, the displaced cartilage may become fixed. The results obtained by this method of treatment have been exceedingly satisfactory. The The painful tension and reflex muscular spasm quickly disappear, and the effusion undergoes speedy absorption. (The Lancet, November 7, 1896.)

TUBERCULIN IN SURGICAL DIAGNOSIS.

If we summarise the results of the treatment with tuberculin it is at once clear that tuberculin is a reliable diagnostic agent in surgical tuberculosis, but with regard to this there has been heretofore no difference of opinion. The dispute has been regarding the therapeutic value of the remedy. My opinion is that in my cases the results obtained might equally well have been obtained by any other mode of treatment. I dare not in any special case blame the tuberculin for the bad result, as the patient who now feels best was the one injected with the greatest quantity, in all about 130mg.; he looks remarkably well and is quite stout. I do not, as said before, attribute this to the tuberculin, but think it proves that the remedy need not necessarily have any injurious effects, either locally or generally. But, in my opinion, its therapeutic value in the tuberculous diseases of the joint is proved. As, however, it cannot be proved to possess any curative power in the treatment of tuberculous joint diseases, it ought to be struck out as worthless. As an exception it might in certain other cases of local tuberculosis have some significance in a therapeutic respect, otherwise its value is only as a diagnostic. (From Dr. Sandberg's paper in the British Medical Journal, October 17, 1896.)

AFFECTIONS OF THE SKIN, &c.

ICTHYOSIS.—Treatment by Thyroid Feeding.

Dr. H. Swift has thus treated 12 such cases. He makes the following remarks :—I generally begin by giving 1 tabloid of gr. v. twice a day to adults, and then gradually increase the dose. In young children I commence with half a tabloid a day. Some patients will, very early in the treatment, complain of the "medicine" making them feel sick, of giddiness and faintness, headache, and palpitation. Others will take 2 tabloids three times a day for some time without trouble. Hebra says icthyosis exercises no baneful influence on the general organisation by its long duration, and is not accompanied by any special disposition to other internal or external lesions. My observation accords with the above ; in fact, when I first commenced treating these cases with thyroid tabloids and saw what a great loss of flesh the treatment produced, and how frequently the patients suffered from general malaise and nausea, although the condition of the skin was improving. I hesitated to push the treatment, considering that they had less inconvenience from the disease than the cure. But as I carefully continued the use of the tabloids, decreasing the quantity when there was any great derangement of the digestive organs or marked debility, I found that a point of toleration was reached—that an equilibrium, so to speak, was established—and then the patient began at once to improve in bodily condition, with also a rapid amelioration of the skin affection. When the recovery is well advanced it is wise to gradually lessen the dose, and to give only sufficient to keep up the effect. Each case has to be treated on its merits, so that no hard and fast rules as to the quantity can be fixed upon, but it is absolutely necessary to continue to give the preparation, as I have found, without exception, that the patient will relapse if the treatment is left off entirely. The smallest dose compatible with benefit should be administered, and that, as far as I can at present judge, should be persisted in in perpetuity. (Australasian Medical Gazette, June 20, 1896.)

IMPETIGO CONTAGIOSA.

It would be more correct to call it inoculated impetigo, not merely inoculable, since the eruption thus called is derived from some primary source of suppuration. It is somewhat local or endemic, being specially common in London, and sometimes occurs in epidemics. The question why this form of suppuration should be so much more contagious than other forms is a curious one. It is clearly not an adequate explanation of this contagiosity to say that the pus contains cocci; so does the pus of the other

local inflammations which are hardly at all contagious from one individual to another, and so do the scales of dandruff, where there is no suppuration at all. What is the difference between the highly contagious character of impetigo contagiosa, which approaches that of a specific disease, and the inert saprophytic character of the staphylococci in other cases? The difference depends upon a gradual evolution of virulence, which may be clearly traced in some cases. For instance, a healthy young person may have a wound on the foot. This, influenced by the saprophytic cocci of the part, suppurates. The cocci cultivated in this local inflammation became sufficiently virulent to produce vesicles and pustules in the neighbourhood. Transferred thence by the finger-nails to the face, a classical impetigo contagiosa, with inflamed glands, may result, which precisely resembles an impetigo conveyed by inoculation from another person. This may, in certain cases, give rise to contagion, spreading to another individual, since cultivation with abundant access of air seems to give these ærobic organisms increased virulence. Finally, transmission from one case to another in rapid succession, according to a well-known pathological law, still further heightens their virulence, till at length the acute, contagious, and apparently specific disease results. The well-known epidemics of impetigo in football players, conveyed by abrasions of the face or hands, or even without them, are an admirable instance of this progressive virulence. Healthy boys or men may become infected with the same species of cocci in a virulent form, which they were possibly carrying in a saprophytic form on some portion of their own bodies. It has been supposed that organisms other than staphylococci are concerned in the contagious form of impetigo, or that there may be some specific microbe (perhaps a bacillus), which prepares the way for the pyogenic staphylococci and then dies out. These explanations are quite plausible, but have not been sufficiently established. In some well-marked cases, at least, the staphylococci seem to be the only organisms present. The same progressive evolution of virulent properties may also, it should be noticed, be traced in other diseases. (British Journal of Dermatology, July, 1896, p. 269.)

LUPUS ERYTHEMATOSUS.

The tubercular nature of this affection is shown by considerations such as these: the fact that it is occasionally accompanied by the enlargement of neighbouring lymphatic glands which can be proved histologically to have tubercular characters; it may coincide with lupus vulgaris; occasionally, although very exceptionally, the bacillus tuberculosis has been found in the diseased structures; it re-acts under the influence of tuberculin;

the histology of the lesions in certain cases resembles that of lupus vulgaris. It is probable in this disease that the contagious element—the bacillus—has somewhat different characters, and is also capable of elaborating toxins of a distinct character from those present in true tuberculosis; it is on this account that the aspect of the lesions vary from the type of lupus vulgaris, and that the results of inoculation have hitherto been unsuccessful. In reference to treatment, much is to be looked for from the careful use of certain of the products of the tubercule bacillus itself, or of certain other organisms, such as the streptococcus of erysipelas. (Report of International Dermatological Congress. British Journal of Dermatology, October, 1896.)

PEMPHIGUS, ACUTE.—Etiology of.

The cases brought forward in support of the views expressed in the introductory remarks are, we think, sufficiently convincing to allow of the following conclusions being arrived at, viz.:—(1) There is a group of rare cases of acute bullous eruption, accompanied by severe constitutional symptoms, and generally terminating fatally, which affects butchers. (2) The disease follows a wound of the hands or fingers. (3) It is probably due to a micro-organism. (4) The same etiological factors are probably at work in another group of very similar cases, in which the patients are brought into contact with animals or dead portions of animals. From the fact that apparently the same micro-organism present in our case, viz., a diplococcus, has been found in three cases of acute pemphigus (Demme, Bleibtreu, Pernet)—a very rare disease—we are inclined to believe that it has a distinct relation to that disease, especially as we have been unable to identify its presence elsewhere. (From Drs. G. Pernet and W. Bullock's paper in the British Journal of Dermatology, June, 1896.)

RINGWORM.

The microsporum is a ringworm with small spores, which vary in size within certain limits, are primarily round or oval, and become polyhedral by pressure. It is an affection of early childhood; invariably respecting the scalp of adults. It never produces sycosis of the beard, and does not attack the nails. It is the most extensive, contagious, and rebellious of scalp ringworms, and the most frequently epidemic. The hairs in the patch are all broken off at different lengths, forming relatively long stumps, which are slender, decolourised, greyish, and break off within the follicle when pulled. They possess a white coating for a little distance beyond the follicle. The hair itself is filled with extremely delicate parallel mycelial threads of which the largest, and also the central, ones have

delicate septa at long intervals. (From Dr. H. Waldo's periscope in the Bristol Medico-Chirurgical Journal, September, 1896.)

Ringworm.—Treatment by Formic Aldehyde.

By Dr. Alfred Salter. Dr. Perry kindly allowed me to treat 40 cases of ringworm of the scalp from his out-patient department at Guy's Hospital. The preparation most used was Schering's "formalin" in full 40 per cent. strength, though in the later cases formic aldehyde of English manufacture was employed. The fluid was vigorously rubbed in a with a largish brush or mop for ten minutes, the hair having been shaved round the margin of the patches. The application was repeated every other day on four occasions, and then entirely discontinued. In some patients the head was painted every day for four successive days. Of the 40 cases only 5 required repainting from non-eradication of the disease, and in these the fault lay not with the remedy, but in the fact that, owing to the struggles of the child, no proper application could be made. The ages of the children treated ranged from 4 to 12, and the extent of the disease varied from a small strictly localised patch to areas which were practically co-extensive with the whole scalp. Microscopal examination was always made before commencing the treatment, and the actual presence of the trichophyton verified, whilst before pronouncing any case cured microscopical examination was again made. In 38 of the cases the fungus presented the characters of trichophyton microsporon. Formalin thus applied induces discomfort and irritation of very brief duration rather than actual pain, and does not vesicate the scalp as it does the skin elsewhere. Only 3 cases showed any suppuration after its use, and in these the process was slight, and did not destroy any of the follicles. It produces, however, a thick crust, just as weaker solutions cause desquamation upon the skin of the arm, and the subsequent application of some emollient is advisable to accelerate the removal of this exudation. Growth of healthy hair commences immediately, and in three or four weeks the denuded patch is covered with hairs $\frac{1}{8}$ in. long. Before concluding, allusion must be made to a remarkable occasional complication of the treatment. The skin, however, was neither hot nor red, and there was no pain nor constitutional disturbance. The œdema only occurred when the area treated was very large. The occurrence of this œdema renders it advisable either to deal with limited areas at a time, or to warn parents of the possible result if the whole scalp is to be attempted at once.—*British Medical Journal*, September 12, 1896. (From The Therapist, October 15, 1896.)

SCABIES.—Balsam of Peru in.

Balsam of Peru, MM. Jullien and Descouleurs (*Presse médicale*, April 11, 1896) say, exerts a toxic influence on the acarus. The application of the balsam is very simple ; it consists in painting the entire affected surface with a light coating of the drug, and then rubbing it in gently. Owing to its volatility, it penetrates easily into the burrows. After the rubbing a bath is to be taken. In order to secure more certain results, M. Jullien recommends that the balsam be applied at night and the bath taken on the following morning. The authors state that they have employed this treatment systematically for five years, and that it has shown itself efficacious in all cases, even in those in which there have been serious relapses. They think that this treatment is especially indicated in patients suffering from impetigo, ecthyma, furuncles, eczema, cardiac troubles, albuminuria, &c. The advantages of this treatment are:—(1) Its simple and painless application; (2) its sure action; (3) its moderate cost and the pleasant odour of the drug; (4) the fact that there is no contra-indication to its use. (New York Medical Journal, May 2, 1896.)

VARNISHES (UNNA'S) FOR THE SKIN.

Dr. Unna, of Hamburg (*Lancet*, August 8th) read a paper before the section in surgery, at the recent meeting of the British Medical Association, in which he remarked that in 1894 he had brought forward some varnishes for the skin, which consisted chiefly of tragacanth. Tragacanth did not suspend heavy particles well unless it was present in a large proportion, and then the varnish did not spread well. He had found a perfect basis formed by the addition of gelatin to the tragacanth ; the tragacanth probably surrounded the gelatin, as the mixtures could be used with drugs which could not be used with gelatin alone. The gelatin and tragacanth were present to the extent of 2½ per cent. each. He suggested that the new basis should be first employed in cases of acute eczema. (New York Medical Journal, September 5, 1896.)

AFFECTIONS OF THE EYE, EAR, THROAT, &c.

AMBLYOPIAS, TOXIC.

Dr. D. Sweinitz in his book suggests the following syllabus of symptoms from the ophthalmoscopic appearances in lead poisoning:—(1) Transient amblyopia, without ophthalmoscopic change, due to an anæsthetic action of the lead on the retina *and optic nerve*, and not unlike amaurosis from uræmia without

fundus lesions. (2) Permanent amblyopia, without distinct fundus changes, or at most some hyperæmia of the nerve-tip and undue filling of the retinal circulation, due to a retrobulbar neuritis, analogous to that occurring under the influence of other toxic agents. This type may terminate in blindness from optic nerve atrophy. (3) Optic neuritis or neuro-retinitis, either especially due to the lead or secondary to changes in the brain or kidneys. (4) Optic nerve atrophy, either consecutive to a plumbic papillitis or due to the primary effect of the lead on the visual apparatus. (5) Various types of retinitis, often due to lead nephritis, but also primary and appearing in the form of vasculitis and perivasculitis. (From a review in the American Journal of the Medical Sciences, June, 1896.)

CATARACT.

In reference to the toxæmic group, I would associate myself with those who think the influence of diabetes as a cause of cataract has been over-estimated. Von Graefe put 25 per cent. down to this cause. Probably less than 1 per cent. is nearer the truth, and the co-existence of the two conditions does not prove their casual relationship. Atheroma of the cervical arteries is, I believe, a true cause; I remember de Wecker demonstrating the fact in his clinique when I was there some six years ago. I once extracted successfully two cataracts from a woman who had a large aortic and innominate aneurism. Ergotism as an alleged cause is interesting in view of its recognised vaso-constrictive action. (From Dr. Job Collins' paper, Medical Press and Circular, July 8, 1896.)

CONJUNCTIVITIS, ACUTE, CONTAGIOUS.

Victor Morax and G. W. Beach (Paris) have recently made an extended bacteriological and experimental study of the subject (*Archives of Ophthalmology* (vol. xxv., No. 1). They give the disease the title of acute contagious conjunctivitis, and find it characterised by the presence of the special micro-organism which has received the name of Week's bacillus. It is always contagious—frequently epidemic. The symptoms, which vary in severity, begin two or three days after infection, with gluing together of the eyelids on awaking in the morning, and small, yellowish masses at the base of the lashes. There is increased lacrymation, congestion, and turbid discharge. It usually begins first in one eye, but affects both in its course. There are burning pain and the sense of a foreign body; the lids are swollen and discoloured; and the eyeball is of a rosy tint, which has given the affection the name of "pink-eye." The symptoms continue to increase for two or three days, and frequently a slight coryza arises. The disease runs an acute course,

recovery being usually complete in two or three weeks, although some cases continue several weeks or even months. It is more severe in adults than in children. In severe cases there may be marked purulent discharge and slight chemosis, and the cornea may become involved. The prognosis is, however, quite favourable. It should be treated by applications of nitrate of silver of the strength of 1 to 40 or 1 to 50, weaker solutions being less effective. The bacillus is found by a microscopical examination of the discharge, with a one-twelfth immersion objective. The cultures of it are best obtained on five-tenths per cent. agar, the tubes being corked to prevent evaporation from the surface, or in a mixture of human serum with peptonised agar. The bacilli are devoid of movement. Inoculation on animals of different species gave results constantly negative. Inoculation of a culture on the human conjunctiva produced a typical attack. (American Journal of the Medical Sciences, October, 1896.)

EUCAINE.

Dr. Gaetano described eucaine as possessing the properties of cocaine as a local anæsthetic, but as being less toxic and as having no effect upon the pupil. The last statement seemed to me to be of practical importancee, because a dilated pupil is an impediment to the performance of many operations upon the eye. It has long been my practice to neutralise the dilating effect of cocaine by a preliminary application of eserine, but this course is not entirely satisfactory. It is difficult to secure the precise degree of effect which is desired, while the eserine dilates the vessels of the iris and occasions free bleeding when they are incised. It also renders the iris tissue comparatively rigid, so that it is less easily drawn out of the anterior chamber. I obtained a supply of a 5 per cent. watery solution of eucaine hydochloride from Mr. Rogers, of 327, Oxford Street, and used it last week for a cataract extraction, the patient being a woman. Before my arrival the nurse had applied a drop of the solution within the lower lid every five minutes for six times, and I found the eye perfectly insensitive. The pupil was unaffected and acted readily to light. There was scarcely any bleeding from the cut iris; there was perfect quiescence of the muscles and there was no pain. I asked the patient whether she had felt anything, and she replied, "I felt something moving about my eye but it did not hurt me." There was no pain afterwards and healing was uninterrupted. I have since successfully used a single application of the same solution as a preliminary to the removal of a foreign body embedded in the cornea. In the original paper it is said that eucaine has been successfully used in dentistry and laryngology, and that solutions may be injected

hypodermically without injury. My first experiments will certainly induce me to use it again, and for tenotomies as well as for iridectomy or extraction. It is said that the solution above mentioned may be sterilised by boiling, again and again if necessary, without undergoing decomposition or suffering any deterioration of quality. (From Mr. Brudenell Carter's paper in The Lancet, July 11, 1896.)

EYE.—Obstetric Lesions of.

De Wecker (*Annales d'Oculist.*, July, 1896) has seen three cases of partial or complete opacity of the cornea in the new-born, the result of application of the forceps during delivery. He was called to see one of the cases when the child was 10 days old; the cornea was so opaque that even with oblique illumination no trace of a pupil could be seen. The mark of the blade of the forceps across the middle of the eyebrow and extending towards the parietal region witnessed the cause of the trouble. De Wecker made, in the space of a month, six subconjunctival injections of 5 drops of 1 in 1,000 sublimate solution, with the result that the opacity was in that time almost completely dissipated, though he thinks that without any treatment such opacity will gradually clear up. He also alludes to cases of paralysis of the external recti and of ptosis, similarly produced. British Medical Journal, September 12, 1896, Epitome, par. 225.)

OPTIC NEURITIS AND CHOKED DISC.

In the twentieth volume of the *Charitié Annalen* Professor Burchardt contributes an interesting and important article on this subject. He first alludes to the difficulty that usually exists in distinguishing between a true inflammation of the optic disc and the so-called choked disc, and he is inclined to attach, for purposes of differential diagnosis, considerable importance to the relative breadth of the arteries and veins of the fundus. He further describes 2 cases in one of which vision was reduced to a minimum, while in the other it was quite absent. He divided the optic nerve sheath in one eye of each patient in order to reduce tension, but in neither case was the operation followed by any success. In a third case, however, in which there was blindness of both eyes in consequence of severe anæmia, he carried out puncture in the lumbar region in the manner recommended by Quincke, and although no improvement in vision resulted it is interesting to note that there were marked subsidence of the venous engorgement and complete disappearance of the half-millimetre of swelling which had been present. It is hardly to be expected that in any case of optic neuritis in which the function of the optic nerve has been

interfered with to such a degree as to cause complete blindness, any operative measure will lead to a restoration of vision; but the fact that in such a case as this the swelling subsided after such a procedure as puncture of the dural sac in the lumbar region of the cord may indicate that cases in which the neuritis has not proceeded to destruction, may be favourably influenced by similar procedures. (Leaderette in The Lancet, July 25, 1896.)

OTITIS, ACUTE, IN TYPHOID FEVER.

In order to secure some definite information upon this subject, Dr. D. A. Heuget (*New York Medical Journal*, June 6, 1896) addressed a circular letter to a number of prominent practitioners, and the following is based on the answers received:—Out of 1,228 cases of typhoid fever, 28 cases of acute otitis media were reported. From all the sources of information he has come to the conclusion that about 2½ per cent. of all cases of typhoid fever suffer from acute purulent otitis media. As regards the stage of the fever when this complication is prone to be developed, the replies were from the end of the second to the end of the fourth week. Mastoid involvement in such cases would appear to be a very rare complication. In all the termination of the otitis was favourable; no chronic aural discharge, no impaired hearing. In such cases the lines of treatment should be based upon the generally recognised plans of treating acute otitis media, special attention being devoted to the condition of the nose and nasopharynx. (From Abstract in Medical Chronicle, June, 1896.)

OBSTETRICS AND GYNÆCOLOGY.

ABORTION.—Treatment of.

Dr. G. H. Washburn, at the end of his paper, makes the following remarks:—If there is no rise of temperature, no bad odour, and no discharge from the uterus, I let them alone; but as soon as there is any rise of temperature, any odour, or continual bleeding, I curette at once; and I do not use the dull curette or one having an irrigation tube through it, which to my mind might carry the germs of sepsis. I prefer to use the ordinary douche. The sharp curette never has done harm in my hands. I wash out with a fountain syringe, and wipe out thoroughly with iodoform gauze. I insert dry iodoform gauze, put to bed, remove the gauze about the sixth day, and I let them up the eighth. I have had no bad results. (Boston Medical Surgical Journal, June 4, 1896.)

CLIMACTERIC.—The Use of Ovarian Substance in.

Professor Landau has been treating climacteric troubles by the administration of ovarian substance, and an account of his work has been published by his assistant, Dr. Mainzer. The remedy was used not only in pains due to the natural climacteric period, but also in the case of women whose ovaries had been removed by operation, in amenorrhœa from prolonged lactation, and in hysterical subjects. The patients who had reached the climacteric age complained principally of sensations of fulness in the head, occurring many times during the day, pains in the back and legs, &c. The dose varied from a gramme to a gramme and a half (from fifteen to twenty-two grains) administered in the form of tablets containing each half a gramme of the ovaries of pigs or cows. After two or three days the sensations of fulness in the head were said by the women to be much less frequent; within a fortnight they had almost totally disappeared. To avoid the influence of suggestion tablets containing none of the substance were given from time to time, but the symptoms immediately reappeared and the patients felt worse. The effect, however, lasted only while the ovarian substance was being taken; and when it was discontinued the symptoms returned after a time. A remarkable effect of the treatment was that in two cases of amenorrhœa it produced a sanguineous discharge from the genital organs. Professor Landau believes that disorders of the vasomotor system due to extirpation of the uterus or ovaries or to the approach of the climacteric period are benefited by the administration of ovarian substance, that its emmenagogue properties, if any, require further investigation, although it acts as a palliative in primary and secondary amenorrhœa, that its good effects are only temporary, and that in general neurasthenia or hysteria it is inert. (The Lancet, July 4, 1896.)

DYSMENORRHŒA.

The causes of dysmenorrhœa may be either (*a*) extrauterine or (*b*) intrauterine. The treatment differs markedly in the two classes of cases, and what would relieve in the one would be worse than useless in the other. Three factors are concerned in the production of the pain of dysmenorrhœa—(*a*) contraction of the muscular fibres of the uterus or Fallopian tubes; (*b*) increased spasm or blood pressure in the tissues of the uterus or appendages—congestion; (*c*) neuralgia of the uterus or the appendages. As to treatment we must treat the cause. Nearly all cases are benefited by rest at the periods, hot vaginal douches during and between the periods, and, in inflammatory cases, tampons of glycerine and ichthyol, and saline aperients. Morphine and alcohol will give great relief, but must never be

recommended. The administration of alcohol to young women at such times is to be blamed for much of the secret drinking that prevails in both the upper and lower classes. The drugs I have found most useful are bromides and belladonna, antipyrin, and cannabis indica (in the form of suppositories), and both viburnum prunifolium and viburnum opulus are excellent ovarian and uterine sedatives. Operative measures should only be resorted to when other and less severe remedies have failed. In cases of dysmenorrhœa due to spasmodic contractions of the uterus or stenosis of the cervix (if there be no signs of extra-uterine disease), dilatation is often of some service, but is seldom of more than temporary benefit. The patient is relieved for three, six, or even twelve months, and then the old pain returns, and the dilatation has to be repeated time after time. In cases of dysmenorrhœa due to chronic pelvic peritonitis, binding down and matting together the uterus, ovaries, and tubes—cases in which the ovaries are cystic and the tubes perhaps occluded, and the uterus retroverted and adherent to the rectum—I have found very marked and permanent benefit result from a "conservative operation" on the appendages. I open the abdomen, free the uterus, ovaries, and tubes from the adhesions that bind them down, and after ignipuncture of the cystic or sclerosed ovaries, fix the fundus forward to the anterior abdominal wall. In grave and otherwise incurable lesions of the appendages, such as abscess of the ovary or pyosalpinx, the removal of the diseased organs is strongly indicated. (By Dr. Christopher Martin, British Medical Journal, October 24, 1896.)

ECLAMPSIA.—Treatment.

In the Geneva Congress Professor Veit summarised his opinions thus:—(1) It is impossible, with the actual data, to recommend one single method of treatment for eclampsia. (2) Many cases are cured by any treatment. (3) It is not yet proved that *accouchement forcé* effected during anæsthesia (dilatation of the parturient canal by india-rubber bags, incisions, or Cæsarean section) can improve the prognosis. (4) We have not enough recent cases treated by bleeding to be able to draw conclusions on that method of treatment. (5) The systematic administration of large doses of morphia seems to give the best results. (6) As long as the pathology of eclampsia is not better known there can be no rational treatment. Very likely this disease has various causes. (7) As obstetric treatment it seems to be best to accelerate prudently the labour, to rupture the membranes, to deliver after complete dilatation of the soft parts, to use large doses of morphia, which diminishes the number of the fits, avoid the administration by the mouth of medicines to

unconscious patients, and induce diaphoresis by external means. (8) There is no reason to look upon eclampsia as being so very dangerous by itself, that we should recommend operations which require an exceptionally skilful hand. (9) In exceptional cases only we must have recourse to major operations. (Dr. Sinclair's summary in the Medical Chronicle, 1896, p. 43.)

FORCEPS TO AFTER-COMING HEAD.

Frendenberg (*Der Frauenarzt*, April, 1896) in a series of statistics of the practice of the Midwives' Training Institute, Cologne, for fifteen years, states that the forceps was applied to the after-coming head in 59 labours. In 18 the presentation was pelvic, and there were besides 12 extractions, 17 versions, and 12 induced labours. In 31 of the 59 the pelvis was narrow. Three mothers were lost in the 17 turnings, 1 in the 12 artificial premature labours, and the remaining 55 mothers recovered. In 2 of the 4 maternal deaths the pelvis was contracted; 3 of the deaths were due to fever, 1 to loss of blood from placenta prævia; 6 of the surviving mothers suffered from puerperal complications, none being very severe. Out of the 18 pelvic presentations, 13 children were born alive, 2 died during labour, and 3 were delivered putrid. Out of the 12 extractions, 4 were lost during labour (all, it appears, through difficulty in bringing down the arm), and 1 was macerated. Six children only were born alive in the 17 version cases, 6 lost during labour, and 5 born putrid. Only 3 of the 6 born alive survived the puerperium. Out of the 12 induced premature labours, 5 children were born alive, but of these only 2 lived, 1 dying from exhaustion, 1 from fracture of the parietal bone, and 1 from trismus on the eleventh day; 4 died during labour, 2 from fractured cranium; and the remaining 3 were putrid at birth. The pelvis was badly contracted in the 12 induced labours. (British Medical Journal, June 6, 1896, Epitome par. 418.)

FUNIS PROLAPSE.—Trendelenburg's Position in.

Dr. Abrahams (*American Journal of Obstetrics*) considers the Trendelenburg position much superior to the genupectoral position formerly recommended for these cases, as being more comfortable for the patient, but, on the other hand, it has the disadvantage of causing difficulty in breathing. Still, as the position may only have to be maintained for a short time, as in Dr. Abrahams' case, treatment of prolapse of the funis by the Trendelenburg position seems to deserve a trial. (Journal of the American Medical Association, May 23, 1896.)

GONORRHŒA.—Etiology of.

Dr. McCann read a paper before the London Obstetrical Society. Previous observations were examined, and an attempt was made to throw additional light on this complex question. As a true understanding could be arrived at only by studying the gonococcus as it occurred in the discharges, abscesses, and the like in the male suffering from gonorrhœa, in the female, and in the eyes of the newly-born, together with cultivation and inoculation experiments, an investigation had been carried out on these lines. The author first described his method of investigation; then alluded to the form and size of the gonococcus, the action of staining reagents, the detection of gonococci in the tissues of the host, the relation of the gonococcus to the pus cells. The gradual process of pus cell destruction was traced and described in detail; the relation of gonococci to epithelial cells, and the stages of epithelial cell destruction were next dealt with. With regard to the recognition of the gonococcus by the aid of the microscope it was found that the form was not characteristic and the size not reliable, that gonococci were present in the pus of every untreated case at some period or other. Secretion free from gonococci did not cause a gonorrhœal inflammation. Secretion containing gonococci, even in small quantities, affected sensitive mucosæ with absolute certainty. If no gonococci were found it could not be said that the disease had not been gonorrhœal. Where numerous other organisms were present, for example, in pus from the cervix uteri, the gonococci might be hidden; they might be imbedded in the mucosa, appearing only at intervals in the secretion. The methods of cultivating the gonococcus were fully detailed and inoculation experiments added. (British Medical Journal, July 11, 1896.)

HEMORRHAGE, SECONDARY PUERPERAL.

Dr. Amand Routh (London) began by defining the condition as hemorrhage occurring after the medical man has left the house in which the patient has been recently confined; that is, any severe bleeding from an hour after delivery until the end of the puerperal period. There were two varieties, the internal or concealed and the external. In the former the uterus was large, there was no leaking, but the cervix was blocked either by spasm or by a clot, &c. The causes were mental or emotional, producing uterine inertia, the retention of pieces of placenta or membrane, and undue exertion. The treatment was to remove the cause by moulding the uterus, and in the concealed variety by passing the hand into the uterus, over-coming the spasm of the cervix and detaching and clearing out any foreign substance (placenta, &c.), the hot douche, and a hypodermic injection of ergotin. In external hemorrhage he advised the hot douche

and massaging the uterus through the abdomen; if this fails and the period at which the patient is seen is within three days of her confinement, he advocated passing in the hand and removing anything abnormal present. Minor methods alone were often useful, but the source of the bleeding must be found in all cases and the hand passed boldly into the uterine cavity. After the third day he would rapidly dilate the uterus with solid dilators, pass in the fingers, clear out the cavity of the womb, and plug with aseptic gauze. (From discussion at the British Medical Association Meeting, Lancet, August 8, 1896.)

INFANCY.—Management of.

With regard to the use of cow's milk as a substitute for the natural food of an infant, there is, however, a new possible source of danger that must be referred to, viz., the practice now largely adopted in some places by milk dealers of adding antiseptics, such as boric acid and other still more active germicides to their milk. Some of the agents thus employed, such as formaline, are of a toxic character, and even the least poisonous of them, viz., boric acid, cannot be added to milk in sufficient quantities to act as a preservative of it without at the same time endangering the health possibly of adults and still more certainly that of any infants thus subjected to its long continued action. This abuse is, therefore, a matter urgently demanding the attention of the sanitary authorities, and, if necessary, the interposition of the Legislature for its repression. (From Dr. More Madden's paper in the Medical Press and Circular, June 17, 1896.)

LAPAROTOMY.—Transfusion and Oxygen Inhalation after.

Dr. James Braithwaite. On June 13, 1896, I removed the uterus, with a large mass of fibroids reaching to half-way between the umbilicus and epigastrium. The patient was in such a condition of debility that for several weeks I kept her in the ward, not daring to operate upon her, as it seemed pretty certain that the issue would be fatal. The operation took one hour and twenty minutes, in consequence of adhesions and the great width of the pedicle. Very little blood was lost. As the wound was being closed it was noticed that the patient was all but pulseless, and transfusion was begun at once. Altogether, 5 pints of warm salt and water were injected, the result being that she was put to bed with a good pulse. On the evening of the second day I found her again almost in a dying condition from ether bronchitis. The hands were cold and clammy, the pulse hardly perceptible at the wrist, and the face white with a slight bluish tinge. There was considerable dyspnœa from

mucus in the finer bronchial tubes. Nutrient enemata, with brandy, had already been given. I directed that she should have oxygen inhalations frequently all through the night. In the morning I found her bright and cheerful, with a fair pulse, and breathing easily. She continued to improve after this, and is now out of danger. The patient's life was thus apparently saved twice: the first time, I think I may say, by Dr. Horrocks, of Guy's, whose paper on the subject of transfusion, recently read before the Obstetrical Society of London, drew my attention to the fact that death from collapse following operations can usually be prevented by transfusion, even although the cause of the collapse is not hemorrhage, and although the collapse may not occur until some hours after the operation. The oxygen again saved the patient's life by aërating the blood. The following sentence from the late Sir George Johnson's "Last Word on Cholera" is equally applicable to this case. He says "the essential feature of the collapse stage is a greatly impeded circulation through the lungs, and the immediate cause of this impediment is contraction of the pulmonary arterioles excited by poisoned blood." (British Medical Journal, October 10, 1896.)

METRORRHAGIA IN VIRGINS.

Laroyenne (*Lyon Méd.*, June 28, 1896) distinguishes the majority of cases of profuse menstruation in young girls, which require no local treatment, from a minority in which the use of the curette is advisable. If, after long attention to hygiene and a course of suitable tonics, menorrhagia persists, interrupted by occasional amenorrhœa, granular or fungous endometritis probably exists. This disease is yet more safely diagnosed when the patient has been perfectly healthy and quite free from anæmia before profuse menorrhagia appeared, and equally free from evidence of diseased appendages after the local symptoms become marked. When the excessive menstruation causes debility it is right to dilate and use the curette. A single application (immediately after the scraping) of cotton-wool soaked in equal parts of water and chloride of zinc is sufficient. Repeated cauterisations may easily cause atresia. (British Medical Journal Epitome, July 18, 1896, par. 48.)

OSTEOMALACIA.

It would appear (1) That in non-pregnant women and in men a sufficient number of cases of recovery after internal treatment has been recorded to warrant its being tried, provided the case is not very advanced. The methods of medicinal treatment which have proved most successful are favourable hygienic conditions, good food, the internal administration of phosphorus, bone marrow, and the use of salt baths. It should also be remembered that there have been a few cases

of favourable result after chloroform narcosis. Pyschological changes have been reported in some women after the ovaries have been removed, therefore that kind of treatment should not be recommended until other remedial measures have been fairly tried; but both in medicine and in surgery the weal of the patient occasionally demands that we choose the less of two evils; therefore, (2) if these fail, or if the case be advanced with considerable deformity, then oöphorectomy should be performed without delay in order that bone changes and deformities may, if possible, be prevented. At the same time it might be well to bear in mind Löhlein's view, that oöphorectomy does not directly cure but is a substantial aid in that direction, therefore cases should be kept under observation for some time after operation. (3) In pregnant women having such a contraction of the pelvis that the birth of a viable child is impossible, operation must be performed sooner or later. It has been much discussed whether abortion should be induced and at a later date the ovaries removed; or whether, if the disease be not progressing rapidly, it would not be better to wait till term, then to operate, either by Cæsarean section and removal of the ovaries, or by a modified Porro. Velits advises Cæsarean section and removal of the ovaries, but several others, among them Neumann and Chrobak, advise the removal of the ovaries and uterus after the method adopted by Chrobak. If the disease is progressing rapidly, operation should be undertaken without delay. After operation one of the striking features is the rapid disappearance of pain—pain which was elicited by pressure on the bones, and which was so greatly aggravated by movement. The absence of this pain renders it possible for the patient to undertake movements which were hitherto avoided, but in advanced cases the recovery of complete control of the muscles is slow, seeing that in them the want of power arises in some measure from the approximation of the origins and insertions of the muscles. In the majority of cases there is no return of menstrual flow after the removal of ovaries. It recurs more frequently in those cases in which the operation has been done for fibroma than for osteomalacia. Of 14 cases in which Fehling performed double oöphorectomy for osteomalacia there was a slight discharge on four occasions, and in one case only a copious flow. Among 78 cases collected by Truzzi he found that in seven there was pseudo-menstruation. (From Dr. Ritchie's paper in the Edinburgh Medical Journal, June, 1896.)

PERINEUM DILATATION.

The patient should be placed in bed on her back or left side with the legs as in natural labour. The mons, labia majora

and minora, perineum, and vagina should be thoroughly washed and rendered aseptic. The accoucheur should wash his hands very thoroughly, and grease them with the following ointment:—Vaseline, 50 grammes; cocaine, 3 grammes; antipyrine, 3 grammes. The perineum, vagina, and os uteri must also be anointed with the same ointment. The accoucheur then passes four fingers of one hand within the vaginal orifice, and makes some semilunar movements, first at one side and then at the other, so as to dilate the perineum. After having made three or four such powerful movements, he introduces the fingers of the other hand, and repeats the performance. When the requisite degree of dilatation is achieved, he then passes the fingers fully into the vagina until the index, middle, and ring fingers touch the os uteri, and makes again the same movements at the same time as he pushes the perineum outwards with the palmar surface of the hand. When he feels the presenting part pressing upon the dorsal surface of his fingers he must then withdraw his hand and take on his other duties. (From Dr. G. Coromilas' paper in the Edinburgh Medical Journal, August, 1896.)

PERITONITIS, SEPTIC.—Treatment by Septicæmic Serum.

Dr. W. A. Macfarlane reports a successful case and gives the following summary:—This case undoubtedly demonstrates the efficacy of the serum in cases of septic peritonitis. Even after thorough curetting, swabbing with iodine and carbolic acid and irrigating the uterine cavity the temperature did not vary one degree, but the first injection of serum brought all of the symptoms below the danger line in twelve hours and quieted the extreme irritation of the stomach, enabling it to retain medicines and nourishment, which we had not been able to do in twenty-four hours from 4 a.m., January 9, to about the same hour January 10, twelve hours after injection of serum. It also produced continuous and profuse perspiration. This latter condition was without doubt instrumental in draining the system of vast quantities of sepsis and being now enabled to take in unlimited quantities of fluids; there was no special drain on the vitality of the patient. Thorough action of kidneys and bowels, no doubt, also assisted in the process of elimination. Another great feature in this treatment is the surprisingly rapid convalescence of the patient. No sooner was the infection conquered when the patient appeared to be at death's door than within twenty-four hours the change was from a dying woman to one asking to sit up. (Journal of the American Medical Association, May 16, 1896.)

PREGNANCY, OVARIAN, REMOVED INTACT.

In *The Lancet*, 1896, No. 3,804, Oliver reports an interesting case of advanced ectopic pregnancy. An effort was made to obtain a skiagraph by exposing the tumour to the Roentgen rays for 30 minutes but without success. On opening the abdomen the tumour was found to have a distinct pedicle, which was ligated and the entire mass removed. It proved to be the right ovary, which had become a closed sac containing fœtus and appendages. After adhesions to the intestine had been separated its removal entire was a simple matter. The patient made a good recovery. (American Journal of the Medical Sciences, 1896, p. 492.)

PERINEUM, RUPTURE OF.

Apfelstedt (*Münchener medicinische Wochenschrift*, 1896, No. 25) calls attention to the importance of complete approximation of the edges of a recent tear to prevent infection from the lochial discharge. It is important that stitches should not pass through the rectal wall, as the contents of the bowel might contaminate the wound. A comparatively simple method is described and illustrated. Silk or silkworm-gut is used. Stitches are inserted through the skin perineum, being entirely buried as they are passed beneath the highest point of the laceration. These stitches are parallel, and when brought together the lacerated surfaces are joined without passing the needle through the borders of the laceration. The result is good approximation of the torn surfaces, the vaginal and (in complete tear) the rectal tissues being brought together without stitches. (American Journal of the Medical Sciences, September, 1896.)

PREGNANCY COMPLICATED BY FIBROMYOMATA.

Dr. F. W. Haulton thus concludes his paper:—(1) That fibromyomata interfere greatly with fertility by preventing conception and by tending towards abortion. (2) That when associated with pregnancy they frequently give rise to much difficulty in diagnosis through masking the usual signs and symptoms of utero-gestation, and by themselves being markedly reacted on by pregnancy. (3) That their association must be looked upon as considerably increasing the risks of pregnancy by complicating labour in preventing ready expulsion of the ovum and predisposing to severe hemorrhage, and by complicating the puerperium. The management of pregnancy complicated by fibromyomata may generally be said to be entirely expectant, as many cases run a natural, uneventful, and satisfactory course. When serious symptoms arise, each

individual case falls to be treated on its own merits according to the position and size of the growth. The alternative methods of removal of the tumour, the induction of abortion and premature labour, or the removal of the entire uterus and tumour, each of which have their advocates, must be selected according to existing circumstances, with an impartial and unbiassed mind. Each have their advantages and disadvantages, and the adoption of any one method alone, to the disregard of all others, cannot be too strongly condemned. (Practitioner, 1896, p. 47.)

PREGNANCY, ECTOPIC.—External Hemorrhage in. Dr. James Oliver. A fecundated ovum may develop in some structure in the pelvis outside the uterus and may even arrive at maturity without exciting during the recognised period of gestation—viz., nine months—any symptom different to that of an ordinary pregnancy, there being throughout this period complete amenorrhœa. External hemorrhage is, however, so frequently observed in association with ectopic pregnancy, whether the ovum is enabled to complete its development or dies at a more or less early period of its existence, that it constitutes a common symptom of the disorder. When the impregnated ovum is lodged in the Fallopian tube the hemorrhage may come either from the tube or from the uterus, and it is highly probable that in the majority of cases it proceeds from both situations. About the twentieth day after conception the chorionic villi begin to become vascular, but before this occurrence the presence of the segmenting ovum has so stimulated the structure harbouring it that the blood-vessels in and underlying the mucous lining of the Fallopian tube have begun to increase in size. As these vessels increase in size the tendency is for the unembedded portion of their walls to become more and more thin, and towards the ovarian and uterine poles of the ovum, where they are virtually unsupported, they rupture on the slightest provocation. The ovum is grasped by the tube, which encircles it like a belt, and at this level the maternal vessels are so supported that they seldom rupture spontaneously. The blood which flows from the neighbourhood of the ovarian pole of the ovum will, if unimpeded, be poured into the peritoneal cavity, whilst that proceeding from the uterine pole will flow externally. When the blood is derived from the Fallopian tube it may make its appearance externally as early as the twentieth day after impregnation. During the evolution of an ectopic pregnancy the uterus usually becomes somewhat enlarged and membranous shreds or pieces are occasionally expelled from this organ. The extrusion of these membranous structures is generally

accompanied by a greater or less amount of hemorrhagic discharge which comes from ruptured vessels in the mucous lining of the uterus itself. As early as the tenth or twelfth weeks of an ectopic gestation these deciduous membranes may be expelled, but independently of their existence blood may be poured out by the vessels of the uterus as early as the sixth or seventh weeks. (The Lancet, July 11, 1896.)

PREGNANCY, EXTRA-UTERINE.

My experience in these five cases of extra-uterine pregnancy seems to warrant me in offering the following postulates:—(1) Extra-uterine pregnancy is more common than has generally been supposed. (2) Inter-peritoneal hæmatocele is almost always the result of a ruptured extra-uterine pregnancy. (3) Diagnosis of extra-uterine pregnancy in the pre-placental period, before rupture, is uncertain and seldom urgent, and, if a diagnosis is made, the time for operation can be selected to suit attending circumstances. (4) Diagnosis after rupture should be made by the general practitioner. It is easy and of greatest urgency in view of prompt interference. (5) Prompt laparotomy after rupture is the only safe and conservative course. (6) The condition of peritoneal collapse, that is, shock and hemorrhage, is no bar to immediate and successful operation. (7) The operation of laparotomy for extra-uterine pregnancy is comparatively easy, and the mortality from it is low. (8) The after-effects of the operation are milder in extra-uterine pregnancy than in laparotomies for appendicitis, pus tubes, uterine fibroma, or ovarian cystoma, and do not involve sterility. (From Dr. E. S. Boland's paper in the Boston Medical and Surgical Journal, August 13, 1896.)

SEPSIS, PUERPERAL.—Treatment of.

The following occurs at the end of Dr. D. J. Evans' paper:—There is a certain rare class of cases met with, where the original septic endometritis, spreading to the lymphatics of the uterus itself, results in a condition of purulent metritis. Hysterectomy has been undertaken for this class, chiefly by American operators. Dr. Baldy, of Philadelphia, has collected reports of nineteen such operations, with a result of seven successful cases. The difficulty with regard to the adoption of operative treatment in acute cases is the impossibility of accurately gauging the degree of septic absorption which has occurred. Marked enlargement of the area of splenic dulness, with great reduction of the red corpuscles, associated with a weak, rapid pulse and high temperature, would contra-indicate any surgical interference, no matter how favourable the local conditions might apparently be. Serum-therapy has been employed with good effect in a few instances recently,

but the cases have been too few to enable us to form any opinion as yet of its value. To sum up, thorough cleansing of the infected uterine cavity by means of the blunt curette and brush, followed by copious antiseptic douching, the introduction of an iodoform bougie and gauze packing, is, in the opinion of the writer, the best method of treatment of puerperal septic endometritis. When such treatment, persisted in for twenty-four to forty-eight hours, does not produce a lower range of pulse and temperature curve, or tend to promote uterine involution, the question of surgical interference must be seriously considered. (Montreal Medical Journal, 1896, p. 859.)

SUPPURATIONS, PELVIC.—Treatment of.

At the Geneva Congress, M. Bouilly (Paris) said that pelvic abscesses should be classed, in a surgical point of view, as follows:—(*a*) Abscess of the cellular tissue, perimetritis, peri-uterine phlegmon; (*b*) abscess of the pavilion or the ovaries, pyosalpingitis; (*c*) primary peritoneal abscess, pelvi-peritonitis, suppurating hæmatocele; (*d*) complex suppuration in which these different organs take part simultaneously in the constitution of purulent collections or complicated with fistulæ opening either on the skin or into the hollow organs of the neighbourhood. The three great methods of treatment are:—(1) Simple incision, abdominal or vaginal, followed by drainage; (2) opening of the abscess by laparotomy; (3) opening through the vagina after vaginal hysterectomy. The simple incision followed by drainage should be employed for acute pelvic abscess of cellular origin as well as for the opening of hæmatoceles acute or sub-acute, of post-partum, post-abortive, or blenorrhagic origin. Thanks to a better method of vaginal antisepsy and mode of drainage, this treatment is gaining ground even for encysted abscesses of the ovary or of the pavilion. Laparotomy should be resorted to in the case of a young woman whenever there existed a doubt as to lesion being bilateral, and in those cases where the seat of the suppuration is high up, adjacent to the fundus of the uterus, but yet far enough from the organ and from the vaginal *cul-de-sacs*, so as to permit a certain amount of mobility to the uterus.

M. Sanger (Leipsig) considered that the majority of surgeons reject to-day vaginal hysterectomy and salpingo-oophorectomy as the method to be preferred in the common kind of pelvic suppuration, that was to say, where the abscess had its source in the accessory organs of the uterus. The radical operation or vaginal hysterectomy should be reserved for grave suppurations of the appendages, or of the conjunctive tissue around the uterus, especially where there existed at the same time serious lesions of that organ. (Medical Press and Circular, Sept. 9, 1896.)

TUBERCULOSIS OF THE FEMALE GENERATIVE ORGANS.

Dr. Albert Vander Veer stated that this subject had been neglected until recent years, and that the modern ideas and progress depend upon careful histological and bacteriological examinations. Tuberculosis of the female pelvic viscera is not limited to any age, the extreme limits being 10 weeks and 83 years. External genital lesions may be confounded with tuberculosis. Heredity is important as suggesting tuberculous possibilities. Tuberculosis is extremely rare in the external genitals, but by no means infrequent in the uterus. Tuberculosis of the uterus can be demonstrated by microscopical examination of the discharges and by curetting. Gonorrhœal infection is often grafted upon tuberculosis. Sometimes infection takes place through the fingers or the instrument or the semen. Tuberculosis originates in the tubes and infects the uterus and cervix. The uterus can be infected from without or within, and the infection is aided by a lacerated cervix, pelvic peritonitis, trauma, &c. The symptoms are local irritation, a pea-sized wart near the vaginal outlet, a discharge from the uterus, &c. The differentiation between the ulcers of syphilis and epitheliomas depends on age, history, &c. Tuberculosis of the cervix can be mistaken for cancer. Many vaginal cases are infected from the tubes, and tuberculous peritonitis may infect the vagina and tubes. (Medical Record, June 13, 1896.)

UTERUS.—Inversion of.

Dr. John W. Walker (Wakefield). I was called to attend a woman and found labour just commencing. The os was dilated to about the size of a sixpence; the pains were frequent and strong. The labour proceeded steadily, and at 2.15 a.m. the child was born. Immediately afterwards I placed my hand on the abdomen to secure contraction of the uterus and found it quite firm; my attention was then directed to the infant, and when I had tied the cord and was in the act of severing it the patient gave a loud scream as if in sudden and violent pain, and as I looked to see what was the cause I noticed the signs of great shock: the face was pallid, large beads of perspiration came out upon the forehead, the pulse was very small and rapid and the skin cold and clammy. On examination I found that there had been a sudden and complete inversion of the uterus, the whole organ lying outside the vulva with the placenta attached, but little or no hemorrhage taking place. I at once gave a hypodermic injection of ether, which quickly restored the patient, and I then removed the pillows to keep the head as low as possible. The placenta was easily peeled off the uterus, and I then commenced to reduce the inversion.

When I had succeeded in getting the whole uterus well within the vagina and nearly everted, strong uterine contractions came on, which caused the fundus of the uterus to again become inverted; so strong were the contractions that my hand became completely cramped, and I was unable on this account to reduce it any further. I then sent for my assistant, Dr. E. C. Maguire, who came and administered chloroform, the patient being by this time in a fairly satisfactory condition; but during the interval of time that had elapsed the inversion had again become much more marked, so that the internal surface of the fundus was presenting at the vulva. When she was completely anæsthetised I was soon able to reduce it with the exception of a small cupping of the fundus, but the uterine contractions were again so strong that my hand became cramped at this stage, and I was compelled to desist and ask Dr. Maguire to undertake the task while I attended to the anæsthetic. After a few minutes he was able to completely reduce the inversion, and then repeated injections of hot permanganate solution caused a satisfactory contraction of the uterus which remained. I am happy to say that there was no after trouble or any rise of temperature; but I kept her in the recumbent position for three weeks in order to secure permanent fixation of the uterus, and she made an uninterrupted recovery. I have recently attended her in a second confinement, which passed off without any special feature. (The Lancet, August 29, 1896.)

UTERUS.—Lactation-Atrophy of.

The following are Dr. Vineberg's conclusions:—(1) Modern researches tend to prove that post-puerperal involution consists chiefly in a retraction and contraction of the individual muscle fibres, whereby the whole uterus is reduced in size. (2) When involution goes on to its full completion the uterus is reduced to a size smaller than that of the non-parous organ. (3) This condition of complete involution is known as post-puerperal hyper-involution. It is principally seen in nursing-women, and from this circumstance has received the cognomen of lactation-atrophy. (4) The so-called lactation-atrophy is a normal and desirable condition. It is temporary in its duration; but very rarely under unfavourable circumstances may become permanent. (5) When the parturient is unable to perform the function of lactation it is the duty of the physician to endeavour to bring about hyper-involution by other means at his disposal. An observance of this course will prevent many a woman from developing a host of gynecological affections which frequently result from imperfect involution. (American Journal of the Medical Sciences, July, 1896.)

Medicine.

GENERAL MEDICINE AND THERAPEUTICS.

Art. 1.—TREATMENT OF ENTERIC FEVER.

By Thomas Whipham, M.D. Oxon., F.R.C.P. Lond.

[The following remarks upon the treatment of some of the complications of Enteric Fever are taken from Dr. Whipham's paper in *The Lancet*, July 11, 1896:]

In the cardiac failure which so often occurs in the third and fourth week of the fever, digitalis or strophanthus may be tried; but in my own experience these drugs have been, on the whole, disappointing, and better results have followed the administration of ether, ammonia, and alcohol. In very severe cases, when it is difficult to induce the patient to take food, and exhaustion is great, it is of the utmost importance to avoid increasing the distaste for nourishment by giving any drug except alcohol by the mouth. Stimulants may then be given in the form of enemata. We had lately in Queen's Ward a nurse who had been attending a woman in an extremely severe attack of enteric fever. The nurse contracted the fever from her patient, and had in her turn the disease so severely that for some hours in the fourth week her life was despaired of. Ether, in the dose of half a drachm, was injected into the rectum when the symptoms were most alarming, and with the best possible effect. The delirium subsided, the subsultus tendinum was diminished, the pulse at once improved in quality, and the patient from that time progressed steadily towards recovery.

Bronchitis is rather a concomitant of enteric fever than a complication, and, unless it is severe and involves the small bronchial tubes, it is better to regard it as part of the disease, and to avoid the risk of producing nausea and impairment of the appetite which follow the administration of the ordinary expectorant drugs, such as ipecacuanha, squills, &c. They should only be employed when the bronchitis becomes so severe as to be a source of danger to the patient's life, and even then the inhalation of oxygen is, perhaps, a more efficacious method of relieving the patient's distress. Hypostatic congestion of the lungs is one of the more serious complications of enteric fever, and adds greatly to the gravity of the patient's condition. Being due to failure of the nervous and the circulatory systems,

it is best treated by a free use of stimulants—alcohol, ether, and ammonia—rather than by any of the remedies usually prescribed for pneumonia. There is, however, a method of mechanically relieving this engorgement of the lungs from which I have seen very satisfactory results, viz., by turning the patient first on to one side for an hour or so and then on to the other. By the action of gravity the engorgement of the uppermost lung is relieved and the circulation in it materially improved. The patient may at the same time be freely supplied with oxygen.

The most serious complications of enteric fever are hemorrhage from, and perforation of, the bowel. With regard to the latter but little can be done in the way of treatment beyond relieving the pain if it exists, and adopting such means as are likely to sustain the failing powers. Hemorrhage from the bowel may occur comparatively early in the course of an attack of enteric fever—in the second week. The melæna is then the result of oozing from the blood-vessels of the congested agminate glands. It is not common at this stage, and if it occurs it is in small amount usually, and is of far less grave import than even a small hemorrhage in the third or fourth week, and probably all that will be required in the way of treatment is to keep the patient perfectly quiet. In the latter stages hemorrhage may occur in large quantities, and is then a cause of grave anxiety or alarm. It occurs sometimes so severely from an eroded blood-vessel on the floor of one of the ulcers that there is an instant fall of, perhaps, three or four degrees of temperature, while at the same time the patient becomes suddenly blanched. Such an accident is, of course, a most alarming complication, but it is not necessarily fatal. One of the worst hemorrhages I think I ever saw in enteric fever occurred a few years ago in a boy of about 14 years of age. He was suffering from a severe attack of the fever, and his bed was next to that of a man who became delirious during the night. The man suddenly sprang out of his own bed and jumped on to the boy's abdomen. A most alarming hemorrhage from the boy's bowel was the consequence, and the worst result was expected. Under careful management, however, no recurrence of the bleeding took place, and the lad made an uninterrupted recovery. In no disease is an accurate knowledge of the date of onset more essential than in enteric fever—in fact, its treatment depends in great measure upon such knowledge. If the history of the case shows that the patient is passing through the second week, and blood appears with the fæces, it is due to oozing from congested vessels, and if the patient remain completely at rest the hemorrhage tends to cure itself by the relief it gives to the engorged agminate glands. If rest fails to check it an enema containing opium will probably have the desired effect by checking peristalsis.

Ergotine has a good reputation in hemorrhages, and the bleeding which occasionally takes place in the second week occurs under conditions in which the drug should theoretically be of much use. It produces contraction of the muscular coats of the arteries, and it is precisely under such conditions that it may be expected to do good. But if it is certain that the patient has reached the later stage of the disease, it may be assumed that the bleeding is due to erosion of a vessel, possibly of considerable size, on the floor of one of the ulcers, and ergot can have but little effect upon it. Any contraction it might produce in the muscular coat of a comparatively large vessel would be quite insufficient to produce an appreciable diminution to the flow of blood from a large ulcerated opening in its coats, or from the complete division of the vessel. Opium and the external application of cold are the most trustworthy remedies. Cold may be conveniently applied in the form of ice-bags to the abdomen, care being taken that the bags be not so large that, by their weight when filled with ice, they cause dangerous pressure on the distended intestines; or the abdomen may be covered with a sheet upon which several small lumps of ice may be placed. There is an objection, however, to this method, viz., that the bedclothes become saturated, and to exchange them for dry ones involves movement of the patient, and to change the position of a person under such circumstances greatly increases the risk of a fresh outbreak of the bleeding. Together with this external application of cold, opium should be administered in order to arrest whatever peristaltic action may still exist in the bowels. Unless the diarrhœa is excessive, and the action of the bowels recurs at short intervals, the opium may be given in the form of enemata of laudanum (ten minims to half a drachm) in starch solution, and repeated as may be necessary, its general effect being carefully watched. If the diarrhœa be excessive the urgency of the symptoms may render it necessary to give the drug by mouth, and for the moment its bad effects on digestion and the appetite must be disregarded. Under such circumstances the pilula plumbi cum opio is the most suitable preparation in four-grain doses every four hours. Turpentine has found favour with many practitioners in bad cases of intestinal hemorrhage, and doubtless it is a useful hæmostatic. The main objection to it is that it interferes with digestion, but, if other methods fail, trial of it should certainly be made.

In these cases of severe hemorrhage in enteric fever the practitioner will sooner or later have to face the responsibility of giving or withholding stimulants. If they are withheld entirely fatal syncope may terminate the case; if they are incautiously employed the hemorrhage may recur. If there are undoubted indications of failure of the heart's action they

are the only remedies likely to avert a fatal issue, and the risk of a recurrence of the bleeding must be placed against that of death from syncope. They should be administered under these circumstances, but as a matter of course they must only be administered under the most careful supervision of the medical attendant in charge of the case. One word more. It is essential that in cases of hemorrhage, however slight it may be, any food which leaves solid residue in the bowels should be avoided as far as possible, because such solid residue is likely to irritate the ulcerated Peyer's patches and the inflamed mucous membrane in their neighbourhood. It is advisable, therefore, that milk for the time being should be replaced by carefully prepared beef-tea, mutton broth, or chicken broth, by meat jelly, or by some of the more palatable extracts of meat which are nowadays so successfully prepared—by food, that is to say, capable of being absorbed by the stomach without leaving a residue which must eventually find its way into the intestinal canal.

2.—COLLECTIVE INVESTIGATION OF THE AMERICAN PEDIATRIC SOCIETY UPON THE SERUM TREATMENT OF DIPHTHERIA.

[This report, which space prevents our reproducing here in full, is of exceptional interest, as it is based on private practice. The tables have also been omitted. The report is signed by Drs. E. Holt, W. P. Northrup, J. O'Dwyer, and S. S. Adams.]

The circular letter asked for information upon the following points :—Age, previous condition, duration of disease when the first injection was made, the number of injections, the extent of the membrane—tonsils, nose, pharynx, and larynx, whether or not the diagnosis was confirmed by culture, complications, or sequelæ, viz., pneumonia, nephritis, sepsis, paralysis ; the result, and remarks, including other treatment employed, the preparation of antitoxin used, and general impression drawn from the cases.

Reports were returned from 615 different physicians, with 3,628 cases. Of these, 244 cases have been excluded from our statistical tables. There are left, then, of these cases, 3,384 for analysis. These have been observed in the practice of 613 physicians from 114 cities and towns, in 15 different States, the District of Columbia and the Dominion of Canada.

In the general opinion of the reporters the type of diphtheria during the past year has not differed materially from that seen in previous years, so that it has been average diphtheria which has been treated. If there is any difference in the severity of the cases included in these reports from those of average

diphtheria, it is that they embrace a rather larger proportion of very bad cases than are usually brought together in statistics. The cases, according to the extent of the membrane, are grouped as follows :—In 593 the tonsils alone were involved ; in 1,397 the tonsils and pharynx, the tonsils and nose, the pharynx and nose, or all three were affected ; in 1,256 cases the larynx was affected either alone or with the tonsils, pharynx, and nose, one or all. In many instances the statement is made by the reporters that the serum was resorted to only when the condition of the patient had become alarmingly worse under ordinary methods of treatment.

In addition to this material which has come in response to the circular, there have been placed at the disposal of the Committee, by the courtesy of Dr. H. M. Biggs, 942 cases treated in their homes in the tenements of New York. Of these, 856 were injected by the corps of inspectors of the New York Health Board, upon the request of the attending physician, and 86 others were treated by physicians receiving free antitoxin from the Health Board. In the first group the diagnosis of diphtheria was confirmed by culture in every case, and in all of the latter except 26 ; in these the diagnosis rested upon extensive membranous deposits or laryngeal invasion. The cases of the New York Health Board were of more than ordinarily severe type, 485, or more than 50 per cent. of these, being reported as being in bad condition at the time of injection ; to mild cases the inspectors were not often called. Further, an unusually large number of them (38 per cent.) were injected on or after the fourth day of the disease. In 182 of these cases only the tonsils were affected ; in 466 the tonsils with the pharynx or nose, the pharynx and nose, or all three ; in 294 the larynx was invaded either with or without disease of the tonsils, nose, or pharynx.

Through the courtesy of Dr. Biggs, the Committee is able to include also a partial report upon 1,468 cases from Chicago, treated in their homes in that city by a corps of inspectors of the Health Department. It was the custom in Chicago to send an inspector to every tenement-house case reported, and to administer the serum unless it was refused by the parents. These cases were therefore treated much earlier, and the results were correspondingly better than were obtained in New York, although the serum used was the same in both cities, viz., that of the New York Health Board.

The Result as influenced by the time of Injection.—Of the 4,120 cases injected during the first three days there were 303 deaths, a mortality of 7·3 per cent., including every case returned. If from these we deduct the cases which were moribund at the time of injection, or which died within twenty-four hours, we

have 4,013 cases, with a mortality of 4·8 per cent. Behring's original claim, that if cases were injected on the first or second day the mortality would not be 5 per cent., is more than substantiated by these figures. The good results obtained in third-day injections were a surprise to the Committee. But after three days the mortality rises rapidly, and does not differ materially from ordinary diphtheria statistics. The figures emphasise the statement so often made that relatively little benefit is seen from antitoxin after three days; however, it must be said that striking improvement has in some cases been seen even when the serum has been injected as late as the fifth or sixth day. The duration of the disease, therefore, is no contraindication to its use.

The Result as modified by the Age of the Patients.—Unfortunately, the ages have not been furnished in the report of the Chicago cases, and we have therefore only the cases reported to the Committee and those from the New York Board of Health for analysis.

The highest mortality is seen in all reports to be in the cases under two years, but including all those returned, even those that were moribund when injected, the death rate was but 23·3 per cent. (21·7 per cent. of the Committee's cases), while, if we exclude cases moribund when injected or dying within the first twenty-four hours, it falls to 19·2 per cent.

After the second year there is noticed a steady decline in mortality up to adult life. In many of the reports previously published the statement has been made that no striking improvement in results was observed in adult cases treated by the serum. Figures strongly contradict this opinion. Of 359 cases over 15 years old, which were returned, there were but 13 deaths.

Paralysis.—It is difficult from these statistics to state what protective power the serum may have over the nerve cells and fibres. Apparently this is not great unless the injections are made early in the disease, and even then in severe cases the amount of damage done to these tissues in twenty-four hours may be very great, even irreparable. In the series of cases here reported, the difference is slightly in favour of the antitoxine treatment, but paralysis is certainly frequent enough to show how extremely susceptible the nervous elements are to the diphtheria toxines. One thing is quite striking from a study of these cases, and that is the proportion that have died from late cardiac paralysis. That very many of them would undoubtedly have succumbed earlier in the disease from suffocation (laryngeal cases) or diphtheritic toxæmia, had the serum not been employed, is beyond question. Although the serum is able to rescue even many such desperate cases, it cannot overcome the effects of the *toxines* upon [illegible] which have occurred before it was injected.

Sepsis.—Sepsis is stated to have been present in 362 of the 3,384 cases, or 10·7 per cent. It was present in 145, or 33 per cent., of the fatal cases. Some explanation is necessary for a correct appreciation of these figures. The majority of the reporters, it is plain from their remarks, have not distinguished between diphtheritic toxæmia and streptococcus sepsis. The former is certainly meant in the great majority of the cases. There is a very small proportion in which there is evidence of streptococcus sepsis. The 6 cases complicating measles, and the 5 complicating scarlet fever, however, should possibly be included among this list.

Nephritis.—The statements on this point are quite unsatisfactory. The reports state that nephritis was present 350 times, or in 10 per cent of the cases.

Broncho-pneumonia.—Broncho-pneumonia is said to have been present in 193 of the 3,384 cases, or 5·9 per cent., a remarkably small proportion when compared with hospital statistics.

Laryngeal Cases.—Of the 3,384 cases reported to the Committee, the larynx is stated to have been involved in 1,256 cases, or 37·5 per cent. In 691, or a little more than one-half the number, no operation was done, and in this group there were 128 deaths.

In the 563 cases, therefore, or 16·9 per cent. of the whole number, there was clinical evidence that the larynx was involved, and yet recovery took place without operation. In many of these cases the symptoms of stenosis were severe, and yet disappeared after injection without intubation. No one feature of the cases of diphtheria treated by antitoxin has excited more surprise among the physicians who have reported them than the prompt arrest, by the timely administration of the serum, of membrane which was rapidly spreading downwards below the the larynx.

Turning now to the operative cases, we find the same remarkable effects of the antitoxin noticeable. Operations were done in 565 cases, or in 16·7 per cent. of the entire number reported. Intubation was performed 533 times, with 138 deaths, or a mortality of 25·9 per cent. In the above are included 9 cases in which a secondary tracheotomy was done, with 7 deaths. In 32 tracheotomy only was done, with 12 deaths, a mortality of 37·4 per cent. Of the 565 operative cases, 66 were either moribund at the time of operation, or died within 24 hours after injection. Should these be deducted, there remain 499 cases operated upon by intubation or tracheotomy, with 84 deaths, a mortality of 16·9 per cent.

Of the 2,819 cases not operated upon, there were 312 deaths, a mortality of 11·3 per cent. Deducting the moribund cases, or those dying within twenty-four hours after injection, the total majority of all non-operative cases was 9·12 per cent.

The great preponderance of intubation over tracheotomy operations shows how much more highly the profession in this country esteems the former operation.

A Study of the Fatal Cases.—There were 350 cases in which the cause of death could be pretty accurately determined by the reports. These died from the following causes, the most important being placed first:—Sepsis (including diphtheritic toxæmia), 105; cardiac paralysis, 53; broncho-pneumonia, 54; laryngeal diphtheria without operation, 48; diphtheritic tracheitis or bronchitis, 11; sudden obstruction of the intubation tube, 3; coughing up the tube with fatal asphyxia, 3; death during tracheotomy, 1; nephritis, 15; general paralysis (probably due to involvement of the pneumogastric), 5; paralysis of the respiratory muscles, 1; measles associated with diphtheria, 6; scarlet fever with diphtheria, 6; gangrene of the cervical glands or cellular tissue of the neck, 2; endocarditis, 1; diphtheritic inflammation of the tracheal wound with sepsis, 1; general tuberculosis (five weeks after diphtheria), 1; exhaustion, 3; convulsions (apart from disease of the kidneys), 3; and meningitis, 1.

The kind of Antitoxin used.—They are given in the order of frequency with which they have been used. First, the serum prepared by the New York Board of Health; second, Behring's; third, Gibier's; fourth, Mulford's; fifth, Aronson's; sixth, Roux's. In addition a large number of cases are reported as having been treated by the serum prepared by the Health Boards of different cities — Brooklyn, Newark, Rochester, Pittsburgh, &c. The largest number of cases have been treated by the serum prepared by the New York Health Board, a very large number by Behring's serum, all others being relatively in small numbers.

In the great majority of cases but one injection is reported. In very severe ones two and three have been given. The largest amount is in a case by Weimer (Chicago), who gave eighteen injections of Behring's serum to a laryngeal case in a child 13 years old. Another instance of ten injections is reported with no unfavourable symptoms.

As a rule, the dosage has been smaller in antitoxin units than is now considered advisable, particularly in many of the laryngeal cases and others injected later than the second day.

Summary. — (1) The report includes returns from 615 physicians. Of this number more than 600 have pronounced themselves as strongly in favour of the serum treatment, the great majority being enthusiastic in its advocacy. (2) The cases included have been drawn from localities widely separated from each other. (3) The report includes the record of every case returned except those in which the evidence of diphtheria

was clearly questionable. It will be noted that doubtful cases which recovered have been excluded, while doubtful cases which were fatal have been included. (4) No new cases of sudden death immediately after injection have been returned. (5) The number of cases injected reasonably early in which the serum appeared not to influence the progress of the disease was but 19, these being made up of 9 cases of somewhat doubtful diagnosis, 4 cases of diphtheria complicating measles, and 3 malignant cases in which the progress was so rapid that the cases had passed beyond any reasonable prospect of recovery before the serum was used. In two of these the serum was of uncertain strength and of doubtful value. (6) The number of cases in which the patients appeared to have been made worse by serum was 3, and among these there is only 1 new case in which the result may fairly be attributed to the injection. (7) The general mortality in the 5,794 cases reported was 12·3 per cent.; excluding the cases moribund at the time of injection or dying within twenty-four hours, it was 8·8 per cent. (8) The most striking improvement was seen in the cases injected during the first three days. Of 4,120 such cases the mortality was 7·3 per cent., excluding cases moribund at the time of injection or dying within twenty-four hours, it was 4·8 per cent. (9) The mortality of 1,448 cases injected on or after the fourth day was 27 per cent. (10) The most convincing argument, and, to the minds of the Committee, an absolutely unanswerable one, in favour of serum therapy is found in the results obtained in the 1,256 laryngeal cases (membranous croup). In one-half of these recovery took place without operation, in a large proportion of which the stenosis was severe. Of the 533 cases in which intubation was performed the mortality was 25·9 per cent., or less than half as great as has ever been reported by any other method of treatment. (11) The proportion of cases of broncho-pneumonia —5·9 per cent.—is very small, and in striking contrast to results published from hospital sources. (12) As against the two or three instances in which the serum is believed to have acted unfavourably upon the heart might be cited a large number in which there was a distinct improvement in the heart's action after the serum was injected. (13) There is very little, if any, evidence to show that nephritis was caused in any case by the injection of serum. The number of cases of genuine nephritis is remarkably small, the deaths from that source numbering but 15. (14) The effect of the serum on the nervous system is less marked than upon any other part of the body; paralytic sequelæ being recorded in 9·7 per cent. of the cases, the reports going to show that the protection afforded by the serum is not great unless injections are made very early.—*Montreal Medical Journal*, *July*, 1896.

3.—THE ETIOLOGY AND PATHOGENESIS OF THE ACUTE NON-DIPHTHERITIC FORMS OF ANGINA.

[The following abstract occurs in *Pediatrics*, September, 1896 :]

A. Veillor (*Archiv. f. Kinderheilk*, 1896, xx, 3 and 4, 248). As belonging to the acute non-diphtheritic anginas, the author enumerates the catarrhal, pseudo-membranous, and phlegmonous forms. Among 22 cases of these anginas, the author has found 10 to be of the catarrhal form, 7 of the pseudo-membranous, and 5 of the phlegmonous. The writer gives the history of the anginas in their generality, and then enters minutely into the technic of their diagnosis, showing how the microscopical and bacteriologial examinations should be made. The latter consists in making cultures in different media like gelatine, agar, serum, bouillon, potatoes, and inoculating the exudate into mice, rabbits, and guinea pigs. The following are the conclusions arrived at from the study of these 22 cases :— (1) There are found pathogenic microbes in the throats of patients suffering from non-diphtheritic sore throats. (2) These pathogenic microbes consist of (*a*) the virulent streptococcus pyogenes ; (*b*) the more or less virulent pneumococcus ; (*c*) the staphylococcus pyogenes. (3) The streptococcus pyogenes was found in each one of the 22 cases of angina. (4) The streptococcus pyogenes was in most cases found associated with the pneumococcus, and in a few cases with staphylococci. In five cases the streptococcus alone was present ; the latter, therefore, seemed to play the most important *rôle* in these anginas. (5) The bacteriological results were the same, although the cultures were made with reference to clinically different anginas. (6) These anginas, which are diverse in their appearances, seem to be of the same nature. Everyone of them is produced by the streptococcus pyogenes alone, or associated with the pneumococcus and staphylococcus. The clinical and anatomical differences are due in part to the location of the pathogenic microbes, which spread themselves on or in the mucous membrane, or in the submucous cellular tissue ; in part they depend on the virulence of the micro-organisms and the susceptibility of the patient. The very same micro-organism may produce a superficial, simply catarrhal inflammation, or a fibrinous exudate, or a phlegmonous process. It may also become generalised and cause arthritic inflammations, skin eruptions, or produce death by septicæmia. (7) The streptococcus of these anginas is identical with the streptococcus pyogenes or that of erysipelas. (8) The streptococcus of these anginas is to be differentiated from the

streptococcus of the saliva, which is present in every normal pharynx and is not pathogenetic. (9) The streptococcus of the saliva, which can easily be obtained from the culture of the exudate in the pharynx of the patient, has been the cause of innumerable mistakes, which have obscured the question of the streptococci of the anginas. (10) There may possibly exist some forms of angina which are due exclusively to the pneumococcus or to other microbes, but they must needs be very rare, as not one case was observed in these 22.

4.—ACCIDENTAL RASHES OCCURRING IN THE COURSE OF THE EXANTHEMATA.

By MEREDITH RICHARDS, M.D., B.S. Lond., Medical Officer of Health, Chesterfield.

[The following is extracted from Dr. Richards' paper :]

Smallpox.—The pre-eruptive (or prodromal) rashes of smallpox are in the order of their frequency :—(1) A general scarlatiniform rash, with or without petechiæ; (2) a morbilliform erythema, general in distribution, but rarely found on the face; (3) a petechial rash limited to the groins and axillæ; (4) a general purpura ; (5) an urticarial-like papular erythema, general in distribution. The more one sees of smallpox the more is one convinced of the importance (especially in epidemic times) of bearing in mind the possibility of an erythema being the prodromal of smallpox. The writer has met with about a dozen cases in which the presence of a scarlatiniform prodromal has led to the diagnosis of scarlatina, though careful inspection of the throat would have shown that it was either unaffected or presented the maculo-vesicular endanthem so characteristic of smallpox.

Less known, and, from a practical point of view, less important, are certain post-eruptive rashes, which include (1) a scarlatiniform erythema, general in distribution, and not differing from that common in various septic states; (2) a development of the smallpox pustules which appears to correspond to what Dr. Crocker has recently described as "impetigo contagiosa gyrata ; (3) accompanying the previous rash or occurring in other cases exhibiting signs of septicæmia, it is not infrequent to observe cases in which the healthy inter-pustular epidermis is raised into flaccid bullæ, containing a few drops of foul muco-purulent fluid.

Varicella. — Pre-eruptive rash. A diffuse scarlatiniform erythema is occasionally seen at the onset of the disease, but is so soon followed by the specific eruption that difficulty in

diagnosis can hardly be said to arise from this cause. The post-eruptive stage is occasionally complicated by the gyrate form of impetigo contagiosa, as in variola. Dermatitis gangrænosa is a well-known but, happily, rare development, though cases intermediate between gangrene and the more severe forms of local ulceration are fairly frequent in marasmic children. It is curious that the only typical instance of varicella (dermatitis) gangrænosa that occurred in the series of cases on which these remarks are based was in a scarlatinal patient without any history of antecedent varicella.

Enteric.—Dr. J. W. Moore has given an admirable account of the accidental rashes of enterica. In addition to purpuric spots, taches blenâtres and sudamina, he has called attention to the existence of simple (1) hyperæmia, (2) miliary eruptions, (3) erythematous rashes, (4) urticaria. It is the erythematous rashes which give rise to the most difficulty. They may be either scarlatiniform or morbilliform, and usually occur in either the first week (pre-eruptive stage) or in the third week (post-eruptive) stage of the disease. The scarlatiniform rash is the more common, and appears to account for those cases in which enteric is wrongly diagnosed as scarlet fever. Four such cases (one verified, post-mortem) have come under the writer's observation during the last four years. It must be confessed that typhoid fever, when ushered in by a scarlatiniform rash, is calculated to deceive the very elect, especially when the patient presents a red strawberry tongue with some injection of the fauces, as occasionally happens. A mistake will, however, be avoided by taking into consideration the comparative severity of the individual symptoms, and especially that any objective symptoms exhibited by the throat will not be sufficient to account for the seriousness of the patient's condition. Fortunately also a strawberry tongue and injected fauces are nearly as rare in typhoid as they are common in scarlet fever.

When the accidental rash is more morbilliform in character it occasionally gives rise to the diagnosis of typhus. A year or two ago I was asked to see a case of typhus with a view of arranging for isolation. The patient presented well-marked symptoms of the "typhoid" state, together with an erythematous eruption which included some small papules on the fore-arms and trunk. On investigation, however, it turned out that the illness had lasted some three weeks before the appearance of the rash, and that the earlier symptoms were those of typhoid. Here the error in diagnosis was entirely due to absence of familiarity with the accidental rash. The miliary rash is of course very common, but it is not always noticed that it frequently leads to a copious desquamation, which occasionally causes an unnecessary suspicion of scarlatina.

Scarlet Fever.—The pre-eruptive stage is so short that there appears to be hardly any initial skin symptoms. Copious miliaria and urticaria may accompany the onset of the eruption and modify the aspect of the case to a remarkable degree.

The common accidental rash of scarlatina is usually a later phenomenon. It has been very fully and accurately described by my friend Dr. Manning. It consists of a rather dark red macular and papular erythema, which appears first on the limbs, especially about the extensor aspects of the joints, but may spread to the rest of the limbs, to the trunk and to the face. It appears almost, if not quite, exclusively in those patients who present ulcerating or sloughing throats, with profuse acrid nasal discharge and possibly double otitis—what one would have called the septic type of scarlatina anginosa, were not the expression "type" interdicted. This rash usually appears in the third week, and is of some prognostic importance, as the death rate in these cases is very high. An exactly similar rash is sometimes due to quinine, and in a case of scarlatina recently under observation, the erythema disappeared when the quinine was omitted, but reappeared as soon as it was resumed. When fully developed this erythema much resembles measles, but the conditions under which it has appeared, and the absence of cough with the presence of a septic throat, makes the diagnosis fairly easy.

Occasionally, however, it would seem that this septic erythema comes out with, or very shortly after, the true scarlatinal eruption, and explains those rare cases which present a striking resemblance to measles, especially from the fact that there is a marked rash on the cheeks, which are otherwise spared in scarlatina. The resemblance is increased by the fact that there may be profuse rhinorrhœa and some conjunctival hyperæmia. The difficulty is increased if the case is not seen quite at the onset; still the diagnosis can usually be made on general principles, and especially by the fact that it is severe measles which is simulated, and that in severe measles the cough and laryngitis are certain to be marked, while the strawberry tongue would be absent.

Measles.—In the pre-eruptive stage there may be a scarlatiniform rash usually more transient and more diffuse than the eruption of scarlatina. This rash is responsible for some of the cases in which measles is diagnosed as scarlatina. Another pre-eruptive accidental rash is a somewhat faint general erythema, not unlike the true measles eruption in its general appearance, but almost confined to the trunk and limbs. It resembles also the blotchy variety of scarlatinal eruption.

Both varieties of pre-eruptive rashes are puzzling and call for the exercise of considerable care in diagnosis. It is often

insisted that the appearance of the throat is pathognomonic in measles. Fagge, following Thomas, attaches importance to an endanthem of scattered points and spots, with a general injection occurring in the pre-eruptive stage. I have paid particular attention to this symptom and carefully watched for it in children known to have been exposed to the infection. It must be confessed that the result has been disappointing, and that only in a very small proportion of cases does not one see anything sufficiently characteristic to assist in the early diagnosis of measles. A slight general injection is infinitely more common than the described endanthem, and on the other hand, cases of punctuate injection of the soft palate do not necessarily develop into measles. Of considerably more value are the milk-white spots described by Dr. Ringer (Reynolds' "System") as occurring on the mucous membrane of the lips and cheek. They look at first sight like drops of milk, but on trying to wipe them away it is found that they cannot be moved without abrasion of the superficial epithelium.

In conclusion, it is only fair to add that the difficulties in diagnosis laid to the charge of the accidental rashes are not a matter of mere academic interest. All those noted in the preceding remarks have actually occurred in the course of some eight thousand cases of infectious disease which the writer has had under his care during the past four years.—*Quarterly Medical Journal, October*, 1896.

5.—RŒTHELN (GERMAN MEASLES) AS A SPECIFIC DISEASE.

By Alex. J. Brownlee, M.D.

[The following is taken from the *Glasgow Medical Journal*, August, 1896, and is an abstract of a thesis for the Degree of M.D. (Glasg.). The notes of cases have been omitted.]

The epidemic during which these cases occurred, being contemporaneous with one of measles in the same district, offered a good opportunity of contrasting rœtheln with measles, and of proving its specificity and independence of either measles or scarlet fever. The fact that an attack of rœtheln in no way protects against either of these diseases was well shown. Of the 50 cases, 3 had measles previously at intervals varying from fourteen days to six years; and 10 others had measles afterwards at intervals varying from one week to two months. With regard to scarlet fever, 6 of the cases had had it at intervals varying from one to five years. In none of the cases did

a relapse occur, nor had any of the patients suffered from rœtheln before. All the patients were children, their ages varying from 6 months to 11 years.

General Description.—This epidemic was mild, but there was abundant proof of the infectiousness and contagiousness of the disease, though in many cases only one child of a family was affected. This was in spite of the fact that nearly all lived in small houses of one or two rooms. The rash often without prodromata, or, at most, a little sickness at bedtime the night before, was often discovered in the morning. It generally began on the face and spread downwards, being most distinct on the back of the neck and shoulders, loins and buttocks, and on the extensor surface of the arms. It consisted of small spots of a colour intermediate between measles and scarlet fever, being neither so livid as the former nor so brilliant as the latter, but more of a pink or rose-red colour. The spots were not raised above the skin, and were almost invariably set in clear skin. Such confluence as is the rule in measles was not seen, though in some cases the abundance of spots on the face, combined with feverish flushing, gave an appearance at first glance suggestive of confluence. The spots always disappeared on pressure. As is common with the disease, two forms of the rash were observed. One consisted of minute closely sprinkled puncta, occurred in patches, and sometimes was accompanied with slight general erythema, which at certain stages gave an appearance very suggestive of scarlet fever. In the other the spots were larger and slightly darker, more resembling measles, but differing from that in being lighter, more regular (circular) in outline, level with surface, and quite without the velvety feeling to the touch which measles so often has. The spots also differed from those of measles in being somewhat darker near the edge than in the centre. Both forms of rash were present on different parts in some cases, but no case was noticed where the one form developed from the other. In both the colour was sometimes darker on the lower part of the body than on the upper. The rash developed in from eighteen to thirty-six hours, and remained out from two to four days, the shorter period being the more common ; and it faded rapidly, leaving a characteristic brown mottling for a day or two.

Many of the cases, even with copious rash, had little or no fever. The highest record, apart from complications, was 103° F., and, even when the temperature was raised, discomfort due to feverishness seemed much less than similar degrees in other diseases. One of the most constant symptoms was well-marked enlargement of the cervical, occipital, and post-auricular lymphatic glands, generally on both sides, sometimes quite evident several days before the appearance of the rash. Its

constancy and early appearance give this symptom considerable clinical importance. There were but few complaints of sore throat; but in nearly all cases there were very characteristic appearances in the throat, consisting of redness, streaking from injection of the vessels, and slight swelling of the soft palate, fauces, and pharynx, but in many cases confined to the palate.

In no case was there marked coryza, and in few was there bronchial catarrh. A short dry cough was apparently due to the state of the throat, and in some cases it might be due to a condition of the peri-bronchial glands similar to that found in the neck. The tongue was generally thickly coated, sometimes very like a scarlet fever tongue at first, but became dry and brown at a later stage. A very constant feature was that the fur came off in large patches, leaving a very red and raw surface. The course of the disease was brief, and complication or unfavourable sequelæ were the exception.

Analysis of Cases—Incubation Period.—This appears to be very variable, but, on the average, longer than the fourteen days of measles. In 2 cases it was twenty-one days, in 2, twenty; in 2, nineteen; in 2, sixteen; in 3, fifteen; and in 3, thirteen days. The variability of the disease in this respect is so marked that some have held it to be of diagnostic importance. Edwards records a range of from six to twenty-one days, and Klaatsch fourteen to twenty-one.

Invasion Period.—This period was also very variable in duration, and the symptoms were slight and of no positive value for diagnosis, except that in a few cases where the condition of the glands in the neck gave a hint of what was coming. In many cases there were no premonitory symptoms at all. In 11 cases there were none before the rash appeared, in 14 cases there had been some symptoms for twelve hours, in 7 for one day, in 10 for two days, in 4 for three days, and in 1 case for each for four, five, six, and seven days. Thus in 42 out of 50 cases the period did not exceed two days. Among the symptoms noted were slight nausea, vomiting, especially at night; languor, lassitude, headache, diarrhœa, chilliness, feverishness, and slight dry cough, none of them severe. In none was there conjunctivitis or lachrymation, and in only 2 was there slight running at the nose. The contrast to the usual condition in measles requires no comment. In 3 cases urticaria preceded the rash for three days, a condition noted also by Cullingworth. Nothing approaching the conditions noted by Trousseau, who mentions convulsions, was seen, nor even distinct pyrexia.

Rash.—In 11 cases the rash was the first symptom. The
of rash described by Klaatsch were well marked,
sing present in 38 cases, the scarlatini form

in 12. The latter might easily have been mistaken for scarlet fever, and such cases of error are recorded by Tompkins and Jack, who each record a case in which a child was admitted to a scarlet fever ward with this rash, and caught scarlet there, the second rash appearing within a very few days after the disappearance of the first. In one case some of the spots became petechial. The duration of the rash was variable, but usually brief. In 2 cases it lasted one day, in 17 cases two days, in 18 cases three days, in 12 cases four days, and in 1 case five days. Longer duration has been recorded, Macphail giving 1 case of seven days, and Alexander and Edwards each one of 14 days.

Pyrexia.—There was little of this. Twenty-five of the cases ran their whole course without it, 15 cases had one day's fever, 7 had two days', and 3 had more, in 2 of which cases due to complications. The highest recorded was 103° F.

Induration and Enlargement of Glands.—This was well marked in all the cases, except one, where it was doubtful. Usually the whole chain of glands was affected, but in some cases only one or two. In the latter cases care was taken to eliminate local causes. This condition usually lasted about a fortnight, thus outlasting all other symptoms. In those cases which developed measles soon after the attack of rœtheln, the indurate glands, which had been so marked in the latter disease, were scarcely, if at all, to be felt in the former, though the cases were pretty severe. In none of the cases did the glands assume the "collar" type of scarlatina. One such case is recorded by Macphail. In a few cases implication of glands in the axilla or groin was noted.

Sore Throat.—The condition described above was very general, but gave rise to almost no discomfort, except slight difficulty in swallowing, and in about half the cases appeared to be the sole cause of slight dry cough.

Coryza and catarrh were almost absent. Four cases had slight conjunctivitis, mostly of one eye only, and none had photophobia. Five had slight running at the nose. Twenty-three had some cough—in one it was noted as severe, and in another as "croupy." In none were any abnormal conditions in the chest detected by auscultation.

The pulse was quickened in every case, even although there might be little or no fever; 120 being common, and up to 140 noted in some cases. Pulse respiration ratio was normal. In no case were symptoms of heart failure seen, though they were very marked in a considerable number of cases of measles occurring in the same district at the same time.

The state of the tongue has been noted above. The tendency to clean in patches was striking. This condition is specially noted by Edwards.

The urine was tested only in 12 cases. No albumen was found by ordinary tests, even though in one case the child had recently had acute nephritis.

Desquamation occurred distinctly in 8 cases, and was doubtful in another. In all it was of the "branny" type, limited in extent, and most distinct on the face. It was usually over in three days, and in no case lasted longer than a week.

Complications were few and mostly slight, special note of such being made in only 9 cases. Four cases had diarrhœa, easily checked. Two cases had broncho-pneumonia, which kept the temperature up for some days. One case had epistaxis, one urticaria, and one had meningitis, probably tubercular, which terminated fatally within a fortnight after the disappearance of the rash. Edwards records one case, and regards the experience as unique.

Diagnosis.—From the foregoing description it will be seen that diagnosis must be based on the complete clinical picture, as no single symptom can be considered pathognomonic. There should be no difficulty in distinguishing a well-developed case from measles, if the points indicated above are attended to. In this epidemic, mostly concurrent with one of measles, the following distinguishing characters were well marked:—(1) Rapid onset, with few or no prodomata; (2) comparatively mild fever and insignificant constitutional disturbance, even where rash was abundant; (3) discrete rash of pink spots, mostly round, and of various sizes; (4) special conditions of tongue, throat, and glands.

6.—THE JOINT AFFECTIONS OF SCARLATINA.

By R. W. Marsden, M.D., B.Sc. (Vict.), &c.,
Resident Medical Officer, Monsall Fever Hospital.

[The following is extracted from Dr. Marsden's interesting paper in the *Medical Chronicle*, August, 1896:]

I have ventured to adopt the following classification:—(1) Scarlatinal synovitis, (2) septic arthritis, (3) acute or subacute rheumatic synovitis, (4) tubercular arthritis.

(1) *Scarlatinal Synovitis.*—This term should only be used in connection with the form which occurs about the end of the first or beginning of the second week of an attack of scarlatina. The terms "rheumatic synovitis" or "scarlatinal rheumatism" are objectionable, since it must be evident to any one who has seen one or two cases merely, that there are several points which are antagonistic to the view of its rheumatic origin. The complication occurred in 115 out of 1,600 cases of scarlatina. The chart shows

that scarlatinal synovitis is liable to supervene during the course of the disease at a comparatively definite period, just as nephritis is liable to supervene at a definite, though later, period.

The early appearance of this complication has given rise to the suggestion that it is connected with the onset of desquamation. In many instances, however, the arthritic symptoms supervened, whilst desquamation did not begin for a variable number of days after, and in other instances desquamation was observed one, two, or more days before the onset of joint symptoms.

Females seem to be more prone to this complication than males. A comparison of the age table shows:—(1) That scarlatinal synovitis is most frequent in patients from 5 to 15 years of age; in conjunction with this, however, it must be noted that scarlatina is most prevalent during the same age period. (2) That attacks of scarlatinal synovitis are relatively most frequently met with in adults or persons over 15 years of age. (3) That scarlatinal synovitis is comparatively rarely met with in patients under 5 years of age.

The *onset* of scarlatinal synovitis takes place during the defervescence of the pyrexia caused by the attack of scarlatina, or soon after the defervescence is completed. Occasionally the onset of synovitis is not accompanied by any pyrexia. The mode of onset is usually acute, and, as a rule, it runs an acute course. In some cases there is nothing to be found save pain on movement or tenderness, in others the whole of the hand is red and swollen. Between these two conditions all grades are met with. The hands and wrists are undoubtedly the favourite site, since they were attacked in no less than 72 out of 100 cases. Any joint, however, may be affected. In my own cases the following order was observed:—Elbows, 25 times; knees, 18 times; and the shoulders, hips, ankles, and toes occasionally. On one occasion the first indication of the onset of the complication was stiffness of the lower jaw.

Course.—After the first sudden onset of pain, tenderness, &c., in a joint or joints, it may be that no further implication of other joints is observed, and recovery takes place in those attacked in the course of a day or two. In other cases succeeding days may witness the supervention of pain, &c., in other joints, yet, in contrast with acute rheumatism, scarlatinal synovitis is remarkable for the absence of any tendency to fly from joint to joint. It is a very evanescent affection, and rarely lasts longer than two or three days. The symptoms are occasioned by an acute, simple inflammation of the synovial membranes, the sheaths of the extensor tendons of the fingers being most commonly implicated. Much difference of opinion exists concerning the view of its pathology, and the following theories have been advanced:—(*a*) Of septic origin, (*b*) a true

rheumatism, (*c*) due to diminished exertion of waste products, (*d*) due to the scarlatinal poison.

(2) *Septic Arthritis.*—While 115 cases of scarlatinal synovitis were met with in 1,600 cases of scarlatina, only 12 instances of septic arthritis occurred during the same period, *i.e.*, in about 0·75 per cent.

The *cause* is to be looked for in the throat or in its neighbourhood, the septic process originating in almost all cases, directly or indirectly, from the severity of the angina. Its occurrence is uninfluenced by sex, but is remarkably affected by age, for of the 12 cases, 9 were children under 5 years, and the ages of the remaining 3 were 5 years, 7 years, and 10 years respectively. This complication does not arise at any definite period of the attack of scarlatina. The earliest date at which it occurred was the seventh day of the disease, and this only took place on one occasion. In 8 out of the 12 cases it arose on the tenth day, but on another occasion it was deferred till the fourth week. The late occurrence of septic arthritis is another feature which is contradictory to the septic theory of scarlatinal synovitis.

The *onset* may be insidious or acute. The contrast between the two is sufficiently distinct to warrant the description of two forms; the differences between these are shown as follows :—

Septic Arthritis—Acute.—(1) More common; (2) occurs at earlier date; (3) occurrence takes place during the primary continued pyrexia, and before any signs of improvement in throat symptoms; (4) attacks one or more joints, joints being attacked together or in quick succession; (5) shows selective power, wrists and neighbourhood most liable, elbows next. *Chronic.*—(1) Especially due to secondary affections of severe angina, such as otitis, stomatitis; (2) one joint attacked at a time, with considerable interval if another joint attacked; (3) site very various, no selective power.

In both forms any joint may be affected, but in neither is the process always limited to the joints. In both the arthritic symptoms are merely local manifestations of a general septicæmia. The acute form is more commonly limited to the joints than the chronic; the latter is closely associated with another type of case in which septic foci appear in various situations, the joints, however, remaining unaffected. It must not be assumed that pus formation occurs in each joint or tissue showing evidences of inflammation, for in both the inflammatory process is occasionally seen to subside after an interval of some days.

Septic arthritis being invariably associated with a severe angina, or serious secondary lesions, the prognosis is necessarily very unfavourable. The acute form is almost invariably fatal. This form of joint affection is essentially an arthritis; the

synovial membrane, the periosteum, the bone, and the tissues surrounding the joint all share in the inflammatory process. The joint cavity is usually filled with a purulent fluid, rich in micrococci, and similar cocci are found generally scattered, or locally collected, in the various tissues above mentioned.

(3) *True Rheumatic Synovitis.*—This complication is even less common than the septic form, and it usually occurs at a still later period. The patient, after an attack of scarlatina, the severity of which is apparently of little moment, reaches an advanced stage of his convalescence possibly without the supervention of any complication whatever, when he complains of pain in one or more joints, and an examination reveals a moderate pyrexia, with pain on movement, tenderness, and frequently a little swelling in connection with the affected joint or joints.

From seven instances of this description it would seem that —(1) The attack is always of the subacute variety; (2) the onset occurs from the fifth to the eighth week of the attack of scarlatina; (3) the skin is moist in the more marked cases with moderate pyrexia, though decided sweating is not met with; (4) the attack usually passes off in the course of a few days; (5) the heart sounds during the attack are, as a rule, muffled and indistinct, and occasionally there is distinct evidence of endocarditis; (6) the joint symptoms may recur; (7) anti-rheumatic treatment, when necessary, is always followed by immediate relief; (8) there is always an inherited predisposition to rheumatism.

The occurrence of rheumatic synovitis late in convalescence constitutes one of the most noteworthy features of this complication. According to Trousseau, it is the same with chorea.

(4) *Tubercular Arthritis.*—The last form of joint affection usually manifests itself after the discharge of the patient from the hospital.

7.—THE TREATMENT OF MEASLES WITH THE BLOOD-SERUM OF CONVALESCENTS.

[The following appears as a leader in the *Medical Record*, August 22, 1896, p. 269:]

The hope that the principles which govern the employment of antitoxin in the treatment of diphtheria could at once be applied to the treatment of other infections diseases has not yet been realised. Conceding the correctness of these principles, it is obvious that they are capable of application only in the case of diseases whose etiology is determined, and which are transmissible to lower animals Among the diseases not yet

placed in this category are a number common among children, and of which more than one attack is uncommon in the same person, such as measles, scarlatina, and whooping-cough. In the case of these it is at present not possible to immunise lower animals and employ their blood-serum in the treatment of the developed disease in human beings. On the other hand, it is possible to utilise for this purpose the blood-serum of convalescents from the disease. The success of such treatment, it may be expected, will depend in a large measure upon the degree of immunity conferred by one attack of the disease. Measles may be included among the diseases in which this degree of immunity is considerable, and for this reason it furnishes a suitable example for the observation of any influence that may result from the therapeutic employment of the blood-serum of convalescents. With these thoughts in mind, Weisbecker (*Zeitschrift für klinische Medicin*, vol. xxx., Nos. 3 and 4) has adopted this plan of treatment in a small series of cases in private practice. The first case occurred in a girl 9 months old, who presented characteristic initial symptoms of measles without exanthem. An injection of 10 grams of blood-serum from a convalescent from the same disease was given. The catarrhal symptoms appeared for a day to be held in check, but they returned, and on the following day an eruption of peculiar character and distribution appeared. Large areas of cutaneous surface escaped, and the face was involved last. While no radical effect was observed, a certain favourable influence appeared evident. Upon the assumption that pneumonia occurs as a complication of measles when insufficient antitoxin is naturally developed to neutralise the circulating toxins, the serum was employed in 4 cases presenting this complication with the happiest results. The children were 1 year, 1¼ years, 9 months, and 5½ years old respectively, and received a single injection of serum varying from 10 to 18 grams. The cases were selected on account of their gravity; all terminated favourably and 2 by crisis.

8.—RECENT PROGRESS IN THE TREATMENT OF WHOOPING-COUGH.

[The following is an editorial taken from *Pediatrics*, September 15, 1896:]

Of all the minor ailments to which children are prone, none is so distressing to experience or so painful to witness as whooping-cough. Every contribution to its therapy, therefore, which is based on considerable experience, is liable to be

favourably entertained and given a trial. Yet year after year, and experiment after experiment, we find ourselves as impotent therapeutically in the presence of the disease, either to stay its progress or cut short its course, as we were a decade or a generation ago. Not long since it was believed and stated by a great many writers that we had found in bromoform the medicament which would rob pertussis of its harassing features and prevent the occurrence of disease to which it predisposes. If we may judge from a retrospect of the literature the promise of its efficaciousness has not been fulfilled, and we are as far to-day from a specific in whooping-cough as we ever were.

The results claimed by some writers for certain drugs in the treatment of this disease are quite remarkable. For instance, Fischer, employing a method originally suggested by Binz (*Berliner klin, Wochenschr, No.* 39, 1895), has had astonishingly good results from the administration of quinine; results which he believes are not to be obtained by any other plan of therapy. In 27 cases in which it was tried in all except in three its beneficent results—reduction in number of the paroxysms, diminution in intensity of the spasm and the like—were to be seen after the third or fourth day. In one case in which the pertussis was complicated with broncho-pneumonia, administration of quinine was soon followed by a diminution in number of the attacks from thirty to ten a day, the intensity of the attacks greatly modified, and the course of the disease greatly abbreviated. In doses of one and one-half grains for a child a year old, and proportionately for children older and younger, the writer thinks we have in quinine the most valuable medicament, and one which can be relied upon to influence the disease beneficently.

Evidence which tends to corroborate the claims made for quinine has been furnished by Clemens, who has made extensive use of it during several epidemics of pertussis. Whenever it cannot be administered by the stomach on account of irritability of the latter, or from constant vomiting attendant on the paroxysm of coughing, he administers it, and with equally satisfactory results, per rectum.

The virtues of belladonna to mitigate the severity of pertussis are widely known. Eschle (*Therapie der Gegenwart*, No. 8, 95), recommends that it be combined with antipyrin, and that twice as much of the latter be given as the former. It is a fact verified by universal experience that children are proportionately tolerant to belladonna as they are antipathous to opium, so that therefore moderately large doses of antipyrin are given. The writer believes that, after seven years' experience with infusion of belladonna leaves and antipyrin, he is justified in saying that this form of therapy is the most reliable means at our disposal.

The statement of Celli, that vaccination often cuts short an attack of pertussis, is undoubtedly true in many instances, but the suggestion that it should be employed therapeutically has never been received with much favour in this country. Bolognini has put it to a test, however (*Journ. de Chir. et de Therap.*, in 1895), and considers that it is worthy of trial in children that have not been vaccinated. Unless other claims for its recommendation are forthcoming, it is safe to say that it will never get far beyond the confines of him who recommends it.

The number of medicaments, devices, and therapeutic make-shifts proposed for any disease is proportionate to the unresponsiveness of it to therapy; so that in incurable disease their name is legion. In almost every case some form of air cure, or water cure, or walking-in-the-grass-with-bare-feet cure, plays a conspicuous part. Whooping-cough is no exception to the rule. Ulmann is the latest advocate of the fresh-air cure (*Munch. med. Wochenschr*, No. 48, 1895). His experience would seem to warrant a trial of this method of treating whooping-cough, but in private practice it would be impossible to carry it out in this country.

9.—INFLUENZAL ARTHRITIS.

By A. Ernest Sansom, M.D., F.R.C.P., Physician to the London Hospital, &c.

[The following is taken from Dr. Sansom's interesting paper. The cases and some other parts have had to be omitted owing to the requirements of space :]

I do not think that it is generally admitted that arthritis which may be with difficulty differentiated from the rheumatic form is sometimes intrinsic to influenza. I propose briefly to review the evidence which has come before me.

[The author then gives cases of (*a*) arthritis coincident with the acute stage of influenza (4); (*b*) arthritis after a third attack of influenza, and in an acute form co-incidentally with a fourth attack (1); (*c*) arthritis subsequently to influenza (2).]

The cases I have cited as examples seem to me to form a chain of evidence to demonstrate that the *materies morbi* of influenza may produce in the early periods of its activity symptoms closely resembling those of acute rheumatism, that at periods remote from the original infection it may give rise to painful lesions of the joints, and that a new infection may be attended with an acute exacerbation of arthritis. The cases in which the signs closely resemble those of acute rheumatism are to be thus differentiated from the latter. (1) Examination shows little or

no evidence of effusion within the joints. The *maxima* of pain are in the ends of the bones, and these are enlarged and tender. (2) The disease is manifested in those who have no traceable proclivity to rheumatism, and sometimes at an age when a first attack of rheumatic fever is rare. (3) In some cases the manifestations are identical with those of a very acute form of osteo-arthritis (so-called rheumatic gout). (4) The morbid associations differ from those of rheumatism. These may be considered under two heads: (1) nervous, (2) cardiac.

In the influenzal cases the direct relation with induced disease of the spinal nervous system seems to me to be demonstrated by the cases I have recorded. In the early manifestations the articular inflammations may be considered to find their parallel with those, of limited duration, which occur in some cases of cerebro-spinal meningitis. In the more remote periods, and after repeated infections, the intense and protracted morbid changes in the joints resemble those of rheumatoid arthritis (osteo-arthritis, arthritis deformans), and have similar nervous associations. Cases of disease of the spinal cord induced by influenza have been recorded by many observers. I have met with several cases other than those I have mentioned.

The occurrence of peripheral (multiple) neuritis in relation with influenza, immediately or remotely, has been attested by a host of observers. In a case of acute arthritis resembling rheumatic fever the manifestation of symptoms indicating an unusual invasion of the nervous system, central or peripheral, is *primâ facie* in favour of an influenzal causation. In a case with undoubted rheumatic antecedents influenza may determine an arthritis widely differing from the rheumatic form, and having associations with profound changes in the nervous system. I have recorded such a case in a clinical lecture, published in the *Clinical Journal*, on January 9th, 1895.

The cardiac associations of influenzal arthritis present questions of great interest and importance. Organic diseases of the heart and pericardium are conspicuous by their absence, the only exception being cardiac dilatation.

In none of the cases I have cited in this communication, except the one in which there was undoubted evidence of the pre-existing rheumatism, did I find signs of organic valvular disease of the heart. I have never met with a case of influenza in which, without co-operating morbid agencies, pericarditis or endocarditis of the ordinary rheumatic form has been manifested. I have seen many cases, however, in which the disease has gravely affected the conditions of a pre-existing rheumatic endocarditis. A well compensated lesion has, after an attack of influenza, shown all the usual signs of increased valvular imperfection, and in some cases there have been evidences of

dangerous and fatal cardiac failure. I have also observed some cases in which there has been influenzal infection in the course of acute rheumatism; then there seemed to be a reinforcement of all adverse symptoms. One such case was rapidly fatal; another went through a long course of pericarditis and endocarditis to a lethal issue.

It has been a general experience that pericarditis and endocarditis are rarely met with in influenza.

Subjective pain ascribed to the heart and disturbances of the cardiac rhythm are very common after attacks of influenza, whilst organic diseases of the heart are comparatively infrequent. It is important to remember that in an influenzal arthritis which simulates the rheumatic; the subjective signs as well as the physical evidences of dilatation of the heart may cause much difficulty in diagnosis. The subsequent history, however, of the cases of organic disease of the heart in association with influenza shows that these present marked differences from any rheumatic form of such disease. Excluding cases in which there was any evidence of pre-existing rheumatism, I have notes of 14 cases in which I have observed organic heart disease in clear association with influenza. These cases are thus distributed:—Dilatation of the heart, 6 cases; mitral regurgitation without detected changes in the chambers of the heart, 5 cases; aortic valvular disease, 2 cases; tricuspid regurgitation, 1 case. In the group of 6 cases of dilated heart, 3 were unaccompanied by physical signs of valvular imperfection. In 1 there was marked cantering rhythm (bruit de galop): progressive heart failure ensued and death—(no autopsy). The other 2 were accompanied by forcible pulsations and pain at heart, but not by serious symptoms. In 3 cases of dilatation of the heart there was valvular imperfection.

Several cases of ulcerative endocarditis have been recorded as following influenza.

Arthritis, which in some points resembles that of rheumatism, may occur in relation with influenza; there may be signs and symptoms of organic disease of the heart in cases which manifest such an affection of the joints; but there are sufficient data to completely differentiate the two forms of disease.—*Medical Press and Circular, June* 3, 1896.

10.—CHOLERA ANTITOXIN.

[The following is a leader taken from the *British Medical Journal*, June 20, 1896:]

In the question of the preparation of antitoxic serum for the treatment of cholera, it is most important to settle whether the toxic material is simply a product which can be separated from

the cholera organism, or remains in the bodies of the cholera bacilli themselves in such a form that it cannot be readily dissolved out. Petri, Hueppe and Wood, and Scholl were the first to indicate that under certain conditions active toxic substances were formed by, and could be dissolved out of, cholera bacilli. Latterly, Pfeiffer has maintained that the separable poison in the cholera culture is comparatively small in amount. Metchnikoff and Gruber have combated this latter idea, whilst Behring and Ransom have been able to separate from cultures an active toxic substance (which is not modified even by a temperature of 100° C., which has a very rapid action on animals, inducing prostration and marked lowering of the temperature) with which they have been able to prepare an antitoxic serum of considerable power. Pfeiffer, of course, cannot accept this set of experiments as correctly indicating the nature of the poison. This controversy has naturally raised the question—Are the two poisons the same, and are the antitoxic serums produced by the injection of the two poisons of similar quality and activity?

It has been maintained by Klein and others that the anti-diphtherial serum produced by the injection of a culture of diphtheria bacilli into a horse has the power of destroying diphtheria bacilli when mixed with them, whilst the antitoxic serum produced by the injection of the soluble toxins only exerts little if any such action.

In a recent paper in the *Annales de l'Institut Pasteur* by Metchnikoff, Roux, and Taurelli-Salimbeni, a similar difference, it is suggested, may exist between cholera antitoxic serums prepared by the two methods. These observers are convinced, as the result of a series of most ingenious experiments with virulent cholera bacilli, that in recent cholera cultures a poison exceedingly resistant to heat, and having all the characters of that described by Ransom, can be prepared. They have been able to immunise horses and goats against this cholera toxin just as Funck has been able to obtain similar immunity against typhoid toxins, and also to obtain antitoxic serum. Using small suckling rabbits, they find that they are able to induce a purely intestinal cholera, similar to that found in the human subject, in which the vibrios are not found in the blood, but in which the symptoms of poisoning are very profound. By using the antitoxic serum prepared by their method this intestinal cholera could be modified and prevented in a certain proportion of cases, although Pfeiffer's antitoxic serum, prepared by the injection of the bodies of cholera bacilli, appeared to exert little or no effect on this form of the disease; the serums, extremely efficacious against ordinary cholera infection, that is to say, against the invasion of the blood and of the organs by the Koch's

cholera bacillus, being powerless against the intestinal cholera of small rabbits.

After failing to obtain results with Pfeiffer's serum against intestinal cholera, the French observers performed a considerable number of experiments with serum prepared by Behring's method, with the result that rabbits so treated recovered in a proportion of 45 per cent., whilst rabbits not treated in this fashion only recovered in a proportion of 24 per cent. When the injection of the serum was made before ingestion of the virus 12 animals died and 15 recovered, against 31 which died and 16 which recovered of the animals untreated. When the injection of the serum was made at the time that the virus was ingested, 8 animals lived and 10 died, against 16 that died and 5 that lived of animals not treated.

There can be little doubt that we have here an explanation of many of the contradictory statements made as regards cholera antitoxic serum, and this paper will give a stimulus to the study of cholera and typhoid antitoxic serums which should result in considerable additions to our knowledge of serum therapeutics.

11.—THE PUBLIC HEALTH ASPECTS OF TUBERCULOUS DISEASES.

By James Niven, M.B., B.C.Cantab.,
Medical Officer of Health to the City of Manchester.

[Dr. Niven's paper was read at the Carlisle meeting of the British Medical Association, 1896. Its importance is only too obvious.]

The infectious nature of tuberculosis had been clearly demonstrated by Villemin, followed by Chauveau, Cohn, and Salomonsen. The discovery of the tubercle bacillus, however, by Koch, and the study of its behaviour and distribution, both inside and outside the body, have greatly extended and have delimited both prevention and treatment. The most important point, so far as direct preventive action is concerned, is now seen to be how we may hinder tuberculous discharges from getting dried and dispersed as dust. It has been doubted whether our attention should not be directed rather to general hygienic improvements than to specific preventive measures.

It is unquestionable that the development of tuberculosis in the individual is checked by good ventilation of the dwelling, plenty of light, dry rooms, healthy occupations, and avoidance of crowding. It is also, however, prevented by good personal habits, avoidance of excess in drink, and good diet—conditions not so amenable to control. It is determined also by the occurrence of such diseases as measles and whooping-cough, of catarrhal conditions of the intestine, by physical vigour, and

so forth. Tuberculosis would undoubtedly be much diminished if the population could be put under favourable sanitary conditions, which would also do much to lessen other diseases; and our efforts to secure for the dwellers in our cities pure air and for the homes, dry, well-ventilated, well-lighted, and well-appointed houses, should never be relaxed. To attain such conditions as would render individuals reasonably safe would, however, be probably a far greater task than to obtain immediate and sufficient measures of prevention. Moreover, in face of the destruction of human life which is going on at present, both systems of procedure are required.

Preventive action should take something like the following shape:—(1) Information as to the precautions needing to be taken should be distributed to every home from time to time, until a sufficient body of opinion is created on the subject. (2) Tuberculosis, attended with discharge, should be made a notifiable disease. This would entail additions to the sanitary staff, including probably a qualified medical assistant. The objects of notification would be:—(*a*) To gather precise clinical knowledge as to the various conditions under which individuals contract tuberculosis. During such an inquiry in Oldham in 1889 I found that about half the deaths from tuberculosis investigated were of people who had previously been in intimate and prolonged intercourse with previous cases. (*b*) To ascertain and remove insanitary conditions about the house as speedily as possible, so as to give a chance to the patient of recovery, and so as to diminish the risk to the other members of the household. (*c*) To distribute printed information on the preventive measures required, and to bring about an understanding with medical practitioners as to their giving systematic personal instruction to the patient and attendant. (*d*) To bring about the disinfection of rooms and clothing when needed. (3) Hospitals for consumptives are at present foci whence a practical knowledge of preventive measures radiates. It may be doubted whether the time is ripe for the establishment of such hospitals at the public expense. If this becomes possible, such hospitals will greatly aid in reducing the amount of infective material in circulation. (4) To prevent the milk from tuberculous cows remaining the source of danger which it now is, we require a systematic examination of cows in all cowsheds by competent veterinary inspectors. Two assistant veterinary surgeons have recently been appointed in Manchester for this purpose, and already five cows have been slaughtered as tuberculous and found to be so. This appointment is one which I have had much at heart. The milk of suspected cows will also be examined bacteriologically where the grounds for condemnation are otherwise not perfectly clear. The veterinary

surgeon is now authorised by the Corporation to examine suspicious cows with tuberculin. Under new regulations an effort will be made to bring the cowsheds into a tolerably sanitary condition—at least those which can be so amended. If the cowsheds are cleansed with water twice a day and the cows kept clean, and if in addition the cowsheds are kept well lighted and well ventilated, then there will not be much risk of infection between cows and human beings or from cow to cow. (5) All meat and pork should be thoroughly examined; hence no meat should be taken direct from a private slaughterhouse for sale. The presence of tuberculous glands in meat or pork should suffice to condemn it. In the case of animals killed at the public abattoir this criterion is not required. It is the more necessary that it should be rigorously applied in other cases. (6) Cats certainly, and fowls possibly, are a serious source of danger. More attention should be given to the diseases of which cats have died—and, indeed, the causes of death of all our domestic animals should be more fully investigated.—*British Medical Journal, August* 8, 1896.

12.—THE SERUM TREATMENT OF TUBERCULOSIS.

Cattaneo gives an account of two cases of infantile tuberculosis treated with Maragliano's serum (*Gazz. degli Ospedali*, March 14, 1896). He first points out the advantages offered by tubercle in children for the observation of this method, presenting as they often do local lesions which tend readily to infect other tissues, and thus forming what may be termed test cases. In each of the cases which he records the patient was kept under observation for twenty days previous to beginning the treatment, and during the whole of this time, as also during that of the treatment, the following amount of food was given:—Bread, 100 g.; rice, 150 g.; broth, 250 g.; meat, 80 g.; two eggs; red wine, 100 g.; Marsala wine, 100 g.; milk, 200 g. The first patient was a female child, aged 3, whose father died of pulmonary tubercle and two brothers of pulmonary disease, probably tubercle. Poor development, flaccid muscles, dry skin, enlarged glands, enlargement of the liver and spleen, 40 per cent. hæmoglobin, 4,624,000 red blood corpuscles, evening temperature with maximum 39° C., body weight 7·55 kilog. The treatment consisted of fifty injections in all, at first on alternate days, then, being well borne, every day. In the first fortnight there was a rapid improvement in the general condition and appetite, the child being more brisk and playful. Hæmoglobin 55 per cent., red blood corpusles 4,820,000, decrease in the number of white blood corpuscles. At the end of the treatment there was no cough, the liver was reduced in

size, the spleen did not protrude from under the ribs, the glands were smaller. Hæmoglobin 55 per cent., red blood corpuscles 4,584,000, no fever, weight of the body 8 kilog., general condition good, appetite good, patient active and playful. The second patient was a female child, aged 5. Family history negative; dentition late; intestinal disturbances; slight ear discharge; some cough; dyspnœa; occasional pyrexia; no improvement by general treatment. At the time when the serum treatment was begun the child was miserable in appearance, wasted, muscles flaccid; the mucosæ pallid; skin dry, scaly; enlarged glands; harsh breathing at each apex, with sibilant *râles*; moist *râles* lower down; abdomen tumid; liver and spleen below the costal margin, the latter slightly. Hæmoglobin 50 per cent., red blood corpuscles 3,000,000, indicanuria, no pyrexia, body weight 11·75 kilog. The treatment included fifty injections. During the first fortnight there was some improvement in the general condition and appetite, with diminution of both dry and moist sounds with cough. Hæmoglobin 65 per cent., red blood corpuscles 4,000,000. In the last three weeks of the treatment there was very slight pyrexia due to some slight local suppuration at the seat of injection, which subsided on discharge of some pus. At the end of the treatment there was great diminution in the dry sounds, no moist being heard, decrease in the size of glands, hæmoglobin 60 per cent., red blood corpuscles 3,624,000, no fever, body weight 11·8 kilog., general condition good, appetite fair, child cheerful. The writer looks upon these cases as very instructive, showing as they do considerable improvement in the tuberculous condition, with marked change for the better in the general state of the patient's health. They are also of importance in showing the harmlessness of the treatment. As these patients were both young and delicate children they would be expected to exhibit whatever bad effects might accrue from the method. The result was, however, only a slight local suppuration in one, and even that was practically insignificant in its effect.—*Epitome of the British Medical Journal, August* 15, 1896, *par.* 137.

13.—TREATMENT OF TUBERCULOSIS.

[The following is taken from Dr. John William Moore's address, in opening the discussion on Tuberculosis, in the Carlisle meeting of the British Medical Association, 1896:]

The Hospital Treatment.—This is an anxious question, and one that is difficult of solution. Theoretically, the air of an hospital ward, however clean and well ventilated that ward may be, is

unsuited for a consumptive. In it his surroundings are calculated to depress. The dietary may not coax his appetite. And then, to look at the question from the point of view of the other patients, the presence of the consumptive may be no more than tolerated. He keeps them awake at night with his racking cough; he resents open windows, yet may pollute the air in the ward to an extreme degree. If his expectoration is not destroyed or disinfected he may even infect his fellow-sufferers with his own disease. He occupies month after month a bed which otherwise would accommodate many generations of patients labouring under less chronic and more curable maladies. Lastly, the hospital treatment of tuberculosis breaks down because of its utter inadequacy to cope with so universal and so tedious a disease. In a week every bed in every hospital in the United Kingdom might be filled with consumptives, and even then thousands upon thousands of cases would be left without hospital accommodation, so wide-spread is the plague of phthisis.

The hospital treatment of tuberculosis should resolve itself into providing (1) consumption hospitals or sanatoria in which the disease could be treated in its earlier and more hopeful stages; (2) special consumption wards in general hospitals, into which tuberculosis, and that disease alone, should be received; (3) refuges for those far advanced in, or dying of, consumption. The German name for such an institution is very expressive—"Friedensheim," or "Home of Peace."

The Climatic Treatment.—This topic naturally falls under the headings—(1) sea voyages; (2) maritime health resorts; (3) mountain sanatoria; (4) dry, sunny climates; (5) moist, warm climates. The climatic treatment of consumption is necessarily expensive, and, therefore, it is only the few who are in a position to fully avail themselves of it. It is equally obvious that in the earlier stages of the disease alone can climate be expected to promote or to effect a cure. Life may, no doubt, be prolonged in many cases even in the later stages. At the same time it seems little short of cruelty to send a doomed consumptive away from home comforts to die at sea, or to lay his bones on a foreign strand. Much circumspection, therefore, is needed on the part of the physician who is called upon to decide whether a patient is to go abroad or to stay at home. And again, a fit choice has to be made in each case of a long sea voyage, the seaside littoral, a mountain health resort, or a lowland and inland climate.

Dietetics and Therapeutics.—These topics may well be considered together. Nor need we enter into details as to the feeding of a patient in declared consumption, for his dietary should be that already above described under the heading of "Prevention of Tuberculosis." Milk, eggs, butcher's meat, and fish should form

the staple food of the phthisical. I have long taught successive generations of medical students that in consumption a high bodily temperature does not debar a meat dietary; on the contrary, the constitutional state of the patient will probably improve on such a diet if he has appetite for it. Should the appetite flag, nourishing light meals should be given at shorter intervals than in health, the invalid sometimes being fed as a fever patient. Milk is universally regarded as the best food in consumption, and deservedly so. Cod-liver oil should be looked on as a valuable food rather than as a medicine in this disease. Chloride of calcium, the old muriate of lime, is a drug of extreme value in the preventive not less than in the curative treatment of phthisis.

Sore throat, cough, sweating, dyspepsia, fœtid diarrhœa, and vomiting all demand special treatment. Fluid extract of condurango in 30-drop doses in water relieves the distressing dyspepsia of phthisis. Vomiting is often relieved by swallowing a cocaine tabloid. Salol and carbonate of guaiacol are among the antiseptic remedies which do good in diarrhœa. Of serum-therapy in tuberculosis I have no practical knowledge; but it will doubtless be a principal method of treatment in the near future.—*British Medical Journal*, *October* 10, 1896, *p.* 1,009.

14.—SERPENT VENOM AND ANTIVENOMOUS SERUM.

By A. Calmette, M.D.,
Director of the Pasteur Institute, Lille.

[The following is taken from Dr. Calmette's paper read before the Carlisle meeting of the British Medical Association, 1896. For some other particulars of this treatment see *Retrospect*, Vol. 112, p. 180:]

I have already made known, in a series of memoirs published since 1892 in the *Annales de l' Institut Pasteur* and in the *Compte Rendus de l'Académie des Sciences*, the results of my researches on the venom of serpents, on the immunisation of animals against this venom, and on the method of obtaining an anti-venomous serum. Dr. Fraser, in the *British Medical Journal* of June 15, 1895, has confirmed the facts which I have published and successfully repeated almost all my experiments. To-day I bring forward some new facts relating to this same question.

I should say first that, contrary to the opinion put forward by certain physiologists even up to the present time, it is perfectly certain that the venoms of different species of snakes produce physiological phenomena which are in general alike. The only difference is in the local action of these venoms, and it is possible to separate artificially the substances which produce

the local phenomena from those which cause bulbar intoxication. This dissociation can be effected by means of heat.

The serum of animals vaccinated against a very active kind of venom, as, for instance, that of the cobra di capello, is perfectly antitoxic in respect of the venom of all other kinds of serpents, and even, as I have recently proved, in respect of that of scorpions. I insist upon this statement because it has recently been contested by Dr. Cunningham, and I am ready to repeat before a commission the experiments which I have made a large number of times on this subject. The best method of vaccination in large animals which are to produce antivenomous serum consists in injecting into them at first increasing quantities of the venom of the cobra di capello mixed with decreasing quantities of a 1 in 60 solution.

All the observations in which the kind of serpent has not been determined must therefore be regarded as doubtful. I have already published a most conclusive case relating to an Annamite bitten in the hand by a cobra di capello at the bacteriological laboratory of Saigon, and who was cured by a single injection of 10 c.cm. of serum. I have just received another very interesting report, which I owe to the kindness of Mr. Hankin, Director of the Laboratory at Agra, in India. It deals with one of the most deadly reptiles of India, the bungarus. I quote verbatim the letter Mr. Hankin has sent me:—

(Copy of a Letter from Surgeon-Captain J. Gould, dated Nowgong, Central India, June 12th, 1896.)

MY DEAR HANKIN,—A thousand thanks for your antivenomous serum received to-day. It is curious that it should have arrived just at the exact moment at which I was sitting down to write you an account of a case I had last night. I was just going last night to mess when Mr. Hodgkinson, of the 5th Bengal Cavalry, came up at a gallop to tell me that one of his punkah coolies had been bitten by a snake. Fortunately Mr. Hodgkinson was on the spot, and had been able to tie a ligature very tightly round the leg, just above the ankle. Within ten minutes we had injected 20 c.cm. of serum into the abdominal wall, after which we made a local injection of a 1 in 60 solution of hyperchlorite of calcium. The man had been bitten on the dorsum of the left foot, between the second and the third toes. He had only the distinct mark of an incisor, a very slight prick, with a stain of blood which marked the spot.

After the injection I could detect nothing except symptoms of fright. The ligature was removed an hour after the injection. Two hours after the injection the temperature was subnormal, the pulse full and slow. No other signs or symptoms. Twelve hours later the patient was perfectly well and walking about. The snake was undoubtedly bungarus cæruleus, full grown, and measuring 28 inches. Unfortunately the syces killed it; it died the very moment I arrived, so that I was unable to test its virulence. There is no doubt that the man was bitten, but I do not know if it was severely, though he states that it was. Mr. Hodgkinson made two excellent ligatures immediately after the man had been bitten, but I cannot help thinking that if the man had been more severely bitten he would have had more obvious symptoms.

I have three cobras in my bungalow. In a day or two I will try and obtain their venom, and I shall probably have plenty of it.

Sincerely yours, JAY GOULD.

It was proved conclusively, therefore, both by experiment upon animals, and by the applications which have already been made in man that we possess in antivenomous serum a specific remedy which is most efficacious in cases of venomous bites. No time must be lost in spreading it throughout all countries in which there are poisonous reptiles. The only difficulty is in procuring sufficient quantities of venom to immunise large animals, such as horses, which can supply plenty of serum. The Pasteur Institute at Lille has at present in its possession enough venom and sufficient completely immunised horses to supply the most pressing needs, and the serum, which is prepared in conditions ensuring absolute purity, will keep for more than a year without losing any of its curative properties.

In all countries where serpents claim yearly numerous victims, and particularly in India, where the annual number of deaths from poisoned bites reaches more than 22,000, the Governments should devote themselves to the foundation, at least in the principal agricultural centres, and in forest or mining industries, of medical aid stations, where any person bitten could come in the least possible space of time to receive assistance. Each of these stations should be provided with a store of serum renewed each year, with hypodermic syringes, with a solution (always freshly made) of calcium hypochlorite, and with other drugs or implements necessary for the dressing of wounds. The expenditure necessary to render this organisation effectual would be very slight in comparison with the enormous services which it would render.—*British Medical Journal, October* 10, 1896.

15.—TWO CASES OF RHEUMATOID ARTHRITIS TREATED BY THE HOT-AIR METHOD.

By W. Knowsley Sibley, M.D. Cantab., M.R.C.S. Lond.,
Physician to Out-patients, North-west London Hospital.

The first, a woman, aged 66, a dressmaker, came under my care at the North-west London Hospital in 1892, having previously been under treatment at another hospital. At this time she had considerable enlargement of all the fingers of both hands; these were quite fixed, and very painful. The movements of the wrists were also very limited, so also was the right elbow. The knees and shoulders were enlarged and painful. The patient attended for many months, and although a large number of drugs and remedies were tried, she gradually became worse, and had to give up her occupation; then she was unable to

dress, and finally unable to feed herself, and was becoming more hopeless every day.

At this time, in August, 1894, one of the Tallerman-Sheffield hot-air cylinders was brought to the hospital, and this new treatment was prescribed. After the first application the pain was considerably relieved, and the joints showed some improvement. After the fourth application the patient, who had been unable to follow her business for many months, was again able to use her needle. After the eighth application, with the exception of the right index-finger, all the others could be flexed without much difficulty. On August 24, after the ninth operation, the patient reported she had resumed her occupation as a dressmaker, and she was able to walk up and down stairs without pain. The patient continued under this treatment till September 13, having then had twenty baths, when she considered herself practically cured, but as the apparatus was still at the hospital, she had an occasional bath up to the end of October, 1894. From that date to November, 1895, she continued at her work, and, with the exception of minor ailments, suffered no inconvenience from her former trouble. At this time she again complained of pain and stiffness in the right hand, so three more baths were prescribed. She again rapidly improved, and from that time to the present the patient has continued much as she now is, and has not relapsed.

The other case was a tailoress, aged 69. For some years her hands had been painful and the joints enlarged. She first came under my care at this hospital on April 22, 1896. Her knees and ankles were somewhat stiff and painful, but the hands were chiefly affected, all the finger joints were much enlarged, she also suffered from bronchitis and asthma. This patient has now had fifteen baths, with the result that her knees and ankles were much less swollen, so also her cough and general nervous condition have greatly improved.

To those unacquainted with the system, I may explain that the treatment consists in placing one limb, usually the most affected one, in a cylinder heated to about 150°, and this temperature is gradually increased up to about 240°. The limb is allowed to remain in for about forty minutes. During this time the patient usually perspired freely from the limb, and, in fact, from the whole body. The temperature taken in the mouth rises one or two degrees, and the frequency of the pulse is also increased. About a quarter of an hour after the limb is removed the temperature returns to what it was before the treatment. The pain in the affected and other parts is greatly relieved, and the patient experiences a considerable feeling of relief generally; especially it is noticed that the bronchitic condition which so often accompanies this affection is also much benefited.—*Medical Press and Circular, June* 10, 1896.

16.—PAINFUL POINTS IN GOUTY COMPARED WITH RHEUMATIC ARTHRITIS.

By W. H. Thomson, M.D., LL.D., Professor of Practice of Medicine in the New York University.

[The following is taken from Prof. Thomson's paper in the *American Journal of the Medical Sciences*, August, 1896 :]

The differential diagnosis between acute gout and acute rheumatism is usually simple enough in typical cases, especially when of recent origin. In many chronic cases, however, particularly when gouty arthritis has become general, the differentiation may not be so easy, and, in practice, we frequently find gouty cases treated for rheumatism or rheumatic patients dosed with colchicum.

For a number of years I have been accustomed to point out that a careful manipulation of the inflamed joints in these affections will show specific contrasts between them in the localisation of the greatest tenderness on pressure. I supposed that this clinical fact had been noted before, but, not finding any reference to it in the works which I have been able to consult, I take this occasion to present the following observations on cases of gout and of rheumatism occurring in my service at the Roosevelt and the Bellevue Hospitals, of New York, during the past few months, with some cases of gout in private practice.

Gout.—Whole number of cases of gout, 34—males, 27; females, 7. As to painful points, there were 38 instances of inflammation of the knees. In every one of these cases, without exception, the points of greatest tenderness on pressure were on the condyles. The more acute the inflammation, the more distinctly is this tenderness pronounced. In the decline of the inflammation tenderness will persist there when it cannot be elicited elsewhere. This is in marked contrast with acute rheumatism, in which, as we shall see, increased tenderness on the condyles, as compared with the other parts of the joint, was not once found. Of 23 cases of inflammation of the ankles, the points of greatest tenderness were found on the malleoli in 11, just below the malleoli in 10, and on the astragalus in 2. On the great toe no uniformity in points of greatest tenderness was made out. The hip-joint was affected in 2 cases, but without any localised tenderness to pressure in either. In the upper extremity, among the numerous phalangeal finger-joints affected, and in many instances distorted with gouty deposits, those of them which were painful enough to give indications showed, without exception, the points of greatest tenderness on the condyles—that is, on transverse pressure ; while pressure between the dorsal and palmar surfaces did not occasion pain, or very slight

pain, compared with pressure on the condyles. I have found this in private practice a valuable sign, in women especially, as these joints are frequently in them the only ones involved in gouty inflammation. The elbows were affected in 12 cases. Of these the most tender points were on the condyles in 6, on the olecranon in 4, and on both the condyles and the olecranon in 2. The shoulders were involved in 5 patients. In 2 of them both shoulders were attacked. No particular point of tenderness was noted except in 1, and that was on the acromion. The cases of inflammation of the metacarpo-phalangeal joints were not enumerated, because their lateral tender points cannot be isolated. The same applies to the wrists, but in both cases of these joints there is more tenderness to lateral pressure than in rheumatism.

Rheumatism.—Number of cases of rheumatism observed, 49. All of them hospital patients. Males, 32; females, 17. Among these the heart was or had been affected in 18, or 36·7 per cent. Tonsillitis occurred shortly before or during the attacks in 11, or 22·4 per cent. Pleurisy occurred in 3 cases, or 6 per cent. The pulse is reported as of low tension, or compressible, in 42, or 85·7 per cent.; of high tension in 5, or 1·02 per cent.; and in 2 not stated. The first attack was polyarticular in 46, or 94 per cent.; monoarticular in 3, or 6 per cent.

In rheumatism, particularly when a joint is acutely inflamed, there is usually more superficial or cutaneous tenderness than in gout. This may mislead as to the existence of special points of tenderness unless the examination be made with special reference to this subject, when, in the great majority of instances, notably in some joints, rheumatism will be found to be scarcely less specific than gout in the localities of greatest pain on pressure, and, what is equally important, that these are in only a few joints the same as in gout. Thus, in the knee, the typical points of tenderness are on the tendon of the quadriceps just above the patella, and below it also at the tendon insertion. Posteriorly equally characteristic points of tenderness are found along the tendons of the hamstring muscles. Out of 58 cases of inflamed knees in my list, 53, or 91·4 per cent., were thus typical, and in 5, or 8·6 per cent., the pain was uniformly diffused over the joint. In no case were the condyles the seat of most tenderness.

Rheumatic inflammation of the ankles is not so distinctive in the location of painful points as in the case of the knees. Of 32 cases my notes are that the most pain was elicited by pressure on the tendons of the dorsal aspect of the joint in 20, or 64·4 per cent. This pain, however, is not so pronounced as in the tendons of the quadriceps and hamstring muscles of the knees. In 3 cases, or 10·6 per cent., the most painful points were under

the malleoli; and in 8, or 25 per cent., there was no specialised place. The hips were affected 4 times, but no localised pain was noted in either. Of the joints of the upper extremity, the shoulders were affected in 20 cases. In only one of these was a special tender point found on the coracoid process. The elbow was affected in 13 cases. Of these in 9, or 70 per cent., the most painful point was elicited by pressure on the triceps tendon. In 4, or 30 per cent., there were no special points. The wrists were affected in 24 cases. Of these the most pain was elicited by pressure on the tendons of the dorsal and palmar aspects in 20, or 83·3 per cent. It was uniformly diffused in 3, or 15 per cent.; and 1 case complained of most pain on transverse pressure, as in gout. In every case noted of inflammation of the finger-joints in the rheumatic patients the pain was localised in the tendons and not on the condyles. Why the hips and shoulders do not commonly show specially painful points may be due to these joints being so covered by large muscles.

It seems natural to infer that the difference between these two forms of arthritis in the respects noted, of pain on pressure, is because gout chiefly affects the periosteal, while rheumatism chiefly attacks the synovial structures. With the exception of the hips and shoulders, therefore, it would seem that the distribution of pain on pressure may be often of use in the discrimination of these two articular inflammations. The ankles and wrists also do not present such marked contrasts as the more simple joints, apparently from the greater number of bones entering into the formation of these articulations.

17.—SEA SCURVY.

[The following is taken from Mr. Johnson Smith's paper in *The Practitioner*, June, 1896:]

The clinical features of a scorbutic attack as still observed from time to time, though happily, as a rule, in isolated instances and under conditions which prevent the manifestation of the most advanced and intense forms of the disease will be found closely and accurately delineated in the pages of Lind and Walter. Now, as was the case in the middle of the last century, the observer notes the round discoloured spots and large purple patches, the stiff and swollen legs, the spongy putrid gums, and the fungous ulcers. There will be found, notwithstanding the extent and apparent severity of these local lesions and extreme debility and mental depression, a singular absence of physical suffering. Moreover, there is

still the same tendency, even in mild cases, and in patients who are seemingly hale and vigorous, to syncope and sudden death.

That the disease now observed in this country in a sporadic form and in few and scattered instances is really the same disease which in past times devastated fleets and armies, and prevailed widely as an endemic in the north of Europe, is further proved by well-assured facts relating to the circumstances under which it is developed and to the simplicity and certainty of its treatment. The records of outbreaks great and small agree in showing that scurvy is preceded by a deprivation of the vegetable elements of human food, and that it is only after the restoration of these elements in suitable forms that the symptoms disappear and health is restored. The conclusions which naturally follow a consideration of these records are confirmed by the results effected in the way of prevention by natural and social causes on land and by a strict observance of antiscorbutic precautions at sea.

Number of cases of scurvy admitted into the Seamen's Hospital, Greenwich (1865 to 1894) were as follows:—1865-69, 382; 1870-74, 109; 1875-79, 120; 1880-84, 131; 1885-89, 37; 1890-94, 11; total, 790 cases.

It is very probable that the numbers of the first of these quinquennial periods give a fair idea of the extent to which scurvy prevailed on board ship for many preceding years. Mr. Harry Leach found that from 1852 to 1863, both these years included, 1,058 cases had been admitted into the hospital ship "Dreadnought."

Of the cases admitted since 1864, 72 per cent. were brought from ships belonging to British ports. In about 92 per cent. the last sea voyage of the patients was from Calcutta or some other East Indian port. The mortality in these cases hardly amounted to 2 per cent., as all but fifteen of the 790 patients recovered. Of these fatal cases eight, more than one-half, occurred in the first quinquennial period. During the past fifteen years there had been but one death from scurvy. The prognosis of the disease when free from complications is very favourable, and it is only in the records of extensive outbreaks in which there is good reason to suspect the concurrence of other results of famine and misery that we meet with a serious death-rate. The chances of recovery in scurvy are, as a rule, out of all proportion to the intensity and the wide and deep diffusion of the lesions. Another point in connection with the clinical history of scurvy is the rapidity of the recovery after the patient has landed and been placed simply on a good and proper diet. Except in cases of extensive periarticular effusion, the stay in hospital is usually a very short one, lasting but for a few days. This sudden change is most marked in the more

severe cases, and the experience of the medical officers in this respect concurs with that of those who in the course of the past century had opportunities of seeing scurvy in its worst and most marked forms.

The records of the Seamen's Hospital show that the subject of scurvy is almost invariably an able or ordinary seaman who has served on a sailing ship. Scurvy is very rarely met with in a steamer, and the officers of a vessel, as a rule, are proverbially exempt. The fact, certainly a suggestive one, that scurvy is "a disease of the forecastle and not of the cabin," can in many, if not in all, instances be accounted for by the better clothing and berthing of officers, and their relative immunity from such influence as prolonged exposure to cold, active muscular exercise and the like, which predispose to a scorbutic attack. Lind attributed this freedom of officers rather to general hygienic than to dietetic differences.

The table of cases admitted into the Seamen's Hospital in the course of the past thirty years shows (1) that at the beginning of this period scurvy prevailed to a very serious extent in merchant ships, and must then have caused much suffering and loss of life; (2) that after 1869 the number of outbreaks suddenly diminished by more than two-thirds; and (3) that after a period of ten years, during which there was a tendency rather to an increase than to a continuous reduction of the amount of cases, a sharp and sudden fall again occurred, which has hitherto been so well maintained as to have reduced scurvy practically to a minimum in the British Merchant Service, and to have placed this Service in a position with regard to this disease almost, if not quite, as good as that of the Royal Navy.

The serious prevalence of scurvy on board ship some thirty years ago, to which the public attention was then forcibly directed by Dr. Barnes and Mr. Harry Leach, was doubtless due to many causes. Then there were more sailing ships trading to Indian ports; these vessels were not so swift as those of the present day, and the voyages were longer; the men were more crowded together, the dietary was in most respects very faulty, and the general hygienic conditions less favourable. But the chief cause, strange as it may seem, was the faith of owner and captain in lime-juice, which, as it was prescribed by law, came to be regarded as the sole efficient and recognised antiscorbutic. So long as a few casks labelled lime-juice were stowed on board ship, owners, officers, and men were thought to be quite safe, and no regard was paid to the possibilities that the fluid contained in these casks might deteriorate and be spoilt in the course of a long voyage, that it might be wasted and not consumed, or that it might not be

lime or lemon-juice at all, but only a useless and perhaps deleterious substitute.

The very decided fall in the number of scurvy cases after 1868, since when the annual quota has never again reached three figures, though it may be partly accounted for by gradual changes in the merchant service, was, without doubt, mainly due to the legislative amendments effected in 1867, by which a full supply of good and genuine lime-juice was secured to the crews of ocean-going ships.

The accelerated decline in recent years which, as was anticipated by Dr. Curnow in 1891, has led to a practical extinction of scurvy in merchant ships must be attributed to many concurring causes. The Merchant Shipping Act of 1867 has certainly done much in this respect, but we owe more to stronger influences than the quantity and quality of a single artificial antiscorbutic. Dr. Curnow has pointed out, as some of the causes of the great diminution in the number of cases of sea-scurvy, the increase of steam shipping, and the decline in the number of sailing ships in recent years, by which changes voyages have been rendered more rapid and the supplies of fresh food more frequent. Ship masters have now at their disposal a wider range of antiscorbutic agents, as vegetables can be preserved so as to retain their special qualities for a much longer period than the longest voyage. Much good has also been done by an adoption in some ships of the excellent though, unfortunately, still permissive dietary that has been drawn out by Mr. Spooner for the Board of Trade. Although it may be fairly assumed that a long-standing cause of national reproach has now been removed, the necessity for constant care in the future should still be regarded.

Dr. William H. Neale (*Ibid.*) gives an account of how he and the crew of "Eira" avoided scurvy in 1881. The following is extracted from his paper:—

We had practically nothing to live upon but bear and walrus meat for twelve months, there was not a drop of lime-juice saved from the ship, and the vegetables were so few that they could not be taken into account. The largest allowance during the six months we made them spin out was four pounds amongst 25 men per day; it was not more than two pounds most of the time, and during the last six months we had no vegetables at all.

My belief is that our complete freedom from scurvy was due to our living in a pure atmosphere night and day, and our diet being mainly fresh meat with plenty of blood in it. The meat and blood were frozen solid within ten minutes of the animal being killed, so that it retained all the properties of freshly-killed meat when we cooked it for food.

18.—TREATMENT OF DIABETES MELLITUS BY URANIUM NITRATE.

By Samuel West, M.D., F.R.C.P.,
Assistant Physician to St. Bartholomew's Hospital, &c.

Further experience during the last twelve months has confirmed the general results which I stated in my paper read before the British Medical Association last year. The effects of the drug are (1) to diminish the thirst, (2) to reduce the amount of urine passed, and (3) to reduce the percentage of sugar. Like all other drugs used in the treatment of diabetes, uranium nitrate does not influence all cases equally favourably. The clinical investigation of the action of drugs in diabetes mellitus is not by any means an easy one. It involves time and care to eliminate the many disturbing factors in the results. In hospital cases I have taken the patients into the ward and kept them for some time on diabetic diet, until the benefit derived from dieting, rest, freedom from care and fatigue had fully shown themselves. As soon as the patient appeared to have arrived at a condition of equilibrium the drug was administered, in small doses at first, which were afterwards gradually increased.

In private practice the results are not so conclusive, and the difficulties to be surmounted are often considerable.

Reference is first made to one of the cases recorded in last year's paper, Mrs. W., who, after an attack of severe influenza, during which time the drug had to be suspended, the percentage of sugar, which had been almost nothing, rose during the influenza to between 4 and 5, subsequently falling back again to about 3. She did not resume the drug, partly because she did not appreciate the difference between 3 or 4 per cent. of sugar and practically none, and because the disease had not been cured by the drug, and for another reason, because she thought the medicine upset her digestion from time to time. She is now passing about 3 or 3·5 per cent. of sugar, but in other respects is fairly well.

Among the new cases to be recorded in the present year there are none which present such striking features as those which were published last year; still, several show the same general improvement, though not in the same degree.

Case 1 was an instance of acute diabetes in a woman, aged 22. On admission she was passing 10 pints of urine and giving 8 per cent. of sugar. After being dieted for three weeks in the hospital, the amount of urine was reduced to 4 pints, and the percentage of sugar from 8 to 6, but during all this time there were very great fluctuations in the amount of urine and in the

percentage of sugar, such as are usually seen in bad cases of diabetes. After being placed upon uranium nitrate, the doses being gradually increased to 5 grains three times a day, the percentage of sugar was reduced to 4, the patient was greatly improved and gained 10 lbs. in weight, and the irregular fluctuations previously referred to entirely disappeared. On leaving the hospital a short time afterwards the percentage was 3·5, and the quantity of urine 3½ pints. She went home to the anxieties and work involved in the care of a family of small children, was unable to continue the dieting, and, I believe, died not long after.

The second case, a woman, aged 44, was passing 7 pints of urine and 7 per cent. of sugar, with considerable fluctuations between a maximum of 8·3 per cent. and a minimum of 6·5. After being dieted in the usual way, the percentage fell to 6·8, and then uranium nitrate was given, with the result that the percentage fell to 4·6. She greatly improved in the hospital, and continued the drug some time after she left.

The third case was that of a young man, aged 25, a case of acute diabetes of short duration. He was passing, on admission, 7 pints of urine, with a percentage of between 6 and 7 of sugar. Ordinary diet produced but little effect upon the quantity of urine and not much upon the percentage of sugar. Under the influence of the drug the percentage fell from 6 to between 3 and 4. Ten grains of the drug were taken three times a day without any inconvenience; the appetite remained good, and the weight increased. Towards the end of his time he was allowed to have four to six ounces of bread or toast. The drug was continued, but under this diet the percentage rose only to 4·5, that is to say, not as much as might have been expected. He has been taking the drug now for a long time as an out-patient, he is considerably heavier than when he was in the hospital, and is able to do his work well, and although under irregular conditions of diet the percentage is heavier, still he believes the drug is a necessity to him, and he is much better and abler for his work while taking it.

The fourth was that of a man, aged 50; a bad case of only six months' duration. The urine was about five pints, with 6 per cent. of sugar. He was dieted as strictly as possible, but it was not possible to get him to do without bread. The uranium was increased up to 10 grs., three times a day, which he took without any inconvenience, and he gained several pounds in weight. Under the combined action of the drug and diet, the quantity of urine was reduced about a pint, the specific gravity remaining much the same, and the percentage fell rather more than 1. The most marked feature about this case was that the irregular fluctuations, which had been so marked

soon after his admission into the hospital, entirely disappeared, and the quantity and percentage became fairly constant.

The last case was that of a private patient, aged 41, who had been the subject of diabetes for about four years. In this case, I regret to say, the drug did not prove a success. He was never able to take more than 3 grs. three times a day, and while taking the drug the lowest percentage that was reached was 2·3. As long as he was under my observation the percentage averaged about 3 before taking the drug. Before he came under my observation the analyses had been made very irregularly, but it was stated that the percentage had, on occasions, been lower than this, and that on some days sugar had been entirely absent. These facts I cannot vouch for. The drug, in the doses given, seemed really to have little or no effect, and as the digestion became somewhat disturbed, the drug had ultimately to be suspended. The failure of the drug in this case may be attributed, I think, in some degree to the idiosyncrasy of the patient, who was unable to take anything but very small doses, and even that not for any length of time.

The general conclusions that may be drawn from these additional cases are the same as those which I expressed last year, viz., that we have in uranium nitrate a drug of considerable value in the treatment of diabetes mellitus, though, like all other drugs, it cannot be relied upon to produce equally good results in all cases indiscriminately.—*Medical Press and Circular*, *August* 5, 1896.

[An abstract of Dr. West's first paper, also from the *Medical Press and Circular*, will be found in the *Retrospect*, Vol. cxii, 1895.]

19.—ON THE HYPODERMIC USE OF IRON.

By J. M. Da Costa, M.D., LL.D.

[The following comes from Dr. Da Costa's paper in the *Therapeutic Gazette*, May 15, 1896:]

For some years I have used, in certain cases, iron hypodermically. I have not employed it steadily, owing to the difficulty of finding a stable, non-irritating preparation. After many trials I think I have obtained this in one of the newer compounds, the ferrous manganese citrate, known also unofficinally as the ferri et mangani citras. The author then details three illustrative cases thus treated, two of anæmia and one of splenic enlargement.

In every instance in which the iron was used subcutaneously full antiseptic precaution was taken. In whatever part of the body the injection was made, the skin was first thoroughly

cleaned; the needle and syringe were always well cleansed with alcohol. The preparation of the ferrous manganese citrate was that made by Merck. The solution prepared, after careful trials, by Mr. Taylor, our apothecary at the Pennsylvania Hospital was a 20 per cent. solution, and was found to be clear and permanent by Dr. Nicholson, the Resident Physician, who used it extensively in the wards. The albuminate and peptonate of iron (Merck) made turbid mixtures that did not keep well. Mr. Taylor's directions for preparing the solution are:—To powder the crystals in a mortar, and gradually dissolve them in hot distilled water, one grain of the crystals to five minims of water. The usual dose for an adult is fifteen minims, representing three grains of the compound salt. The author then refers to the various physicians who have thus used iron and to the preparations employed by them.

The dose of iron for hypodermic use should not, to begin with, be more than one-half of what is given by the mouth. It gets rapidly into the circulation. Rosenthal injected 0·04 gramme of the pyrophosphate in solution into his own thigh, and thirty minutes afterwards found the iron present in the urine. The effect on the nervous system of iron used subcutaneously, is described as a sense of strength and excitation—in some cases, where large doses were given, amounting even to delirium; of this I have personally seen no instances, nor have I of the sneezing, the nausea and vomiting that are said to have occasionally followed its employment. Fever has been stated to sometimes happen; this may be due to general want of care in hypodermic medication. I am, from experience, unacquainted with its occurrence.

Iron ought not to be used in the hypodermic form indiscriminately. It is mostly unnecessary to subject the patient to the annoyance of this form of medication; but where rapid action is needed, as after exhausting hemorrhages, or in anæmic persons with delicate digestion who cannot assimilate iron by the stomach at all, or in gastric ulcer where it is desirable to prescribe iron, or when iron given by the mouth constipates excessively, or when a decided action on the nervous system is required, and one that shall be produced as promptly as possible, I think it is by far the most advantageous way of using it.

It has been claimed for iron thus introduced into the system, for instance by Rocci, that it remains in the organism as an assimilable substance, producing hyperæmia in various organs and tissues, favouring the absorption of œdema in anæmic patients, the destruction of old red blood-corpuscles, and the formation of new hematins. If this be true, the effect of hypodermic injections will be much more lasting than that following other forms of administration. Magagni dwells upon

the circumstance that when iron is thrown under the skin it acts directly upon the whole blood-forming apparatus, and not indirectly, as when introduced by the mouth; while Stockman holds that it is stored up in the liver, from which it is slowly excreted into the blood. Be this as it may, it is certain that there is a field for iron used hypodermically that is not exhausted merely by instances in which it is more advisable, on account of poor digestion, to so give it; but, as with opium and other drugs, we may from hypodermic use get results not only speedier, but sometimes different from those obtained by the ordinary methods of administration.

20.—SOME THERAPEUTIC USES OF GUAIACOL.

By Horace G. McCormick,
Physician to the Williamsport Hospital, Pennsylvania.

[The following is taken from Dr. McCormick's paper in the *Therapeutic Gazette*, *June* 15, 1896. The cases referred to are almost exclusively examples of typhoid fever.]

I desire to give my experience, gleaned from bedside observation, of that little-written-about drug, guaiacol. Its use as a local application for the reduction of temperature was first suggested to me by Dr. J. Solis-Cohen, some two years ago, in a case of tuberculosis which he saw in consultation with me. Its action in this case was so prompt and effective that I pushed the investigation in other diseases.

The effect of guaiacol lasts from three to four hours; the more often it is applied the greater the effect. When I first commenced the use of this drug I found that the sudden reduction of temperature caused chilling in a number of cases, but after I became more accustomed to its use chills rarely occurred. If it can be avoided the temperature should not be reduced below 100°, and this is a matter which can easily be regulated after the application has been made a few times, care being taken to commence with a small dose, say ten to fifteen drops, this gradually being increased if necessary until the temperature is reduced. It has been suggested that by this rapid reduction of temperature there is great danger of producing congestion of some of the internal organs of the body. I have not seen a single unfavourable symptom (except an occasional chill) following its use.

The point selected for the application was the right iliac region. This was thoroughly cleansed with soap and water, and after the part was thoroughly dried (it is important that the surface should be entirely free from moisture, for guaiacol

being of an oily nature will not be absorbed if there is the least moisture present) the guaiacol was slowly dropped upon the surface and thoroughly rubbed in with the hand for from ten to fifteen minutes. The part was then covered with oiled silk or waxed paper. The only preparation used was Merck's, and it rarely failed to produce the desired result. Any other point would probably do as well for the application, but I selected this because it was as near the seat of the trouble as I could possibly get, and could be easily reached and covered with the oiled silk, without in any way disturbing the patient. In only three cases was any local irritation produced, and I was forced to move to the left side to make my applications. There were no unpleasant symptoms accompanying its use, and no complaint was made by any of the patients. Sweating is nearly always produced, corresponding somewhat to the greater or less reduction of temperature.

It may be urged that the fever of typhoid is not the disease, and does not call for treatment. That it is the disease no one will pretend to assert; but that it is an important symptom, and when it rises beyond a certain point calls for something to reduce it, or keep it in abeyance, every physician who has had much to do with this disease can bear testimony.

Guaiacol when given internally does not markedly reduce the temperature. I have given as high as ten drops in a single dose to a patient without materially affecting the pyrexia, while the same amount thoroughly applied to the skin would reduce the temperature to a marked degree. I have also applied the remedy to those in health in sufficient doses to reduce an abnormal temperature, without any effect upon either the temperature or the pulse.

As an intestinal antiseptic I believe guaiacol has no superior. I have used it in 56 cases of typhoid fever with the best results. The best evidence of its virtue in these cases is the fact that tympanites was either entirely abolished or was present in so slight a degree as to be of no consequence. The tongue was moist throughout the disease, and delirium if present was of a very mild form. Of the 56 cases thus treated, 55 recovered. The one that died was admitted to the hospital on the fourteenth day of his sickness, and died on the nineteenth—of perforation; an autopsy was made, and it was found that the perforation had taken place about three inches above the ileo-cæcal valve. When the abdomen was opened, the unmistakable odour of guaiacol was found to be present. This was to me an important discovery, as by the death of this man was proven—what I had before been led to believe—that guaiacol passes through the alimentary canal unchanged, for the guaiacol which had been given this man was still guaiacol at the ileo-cæcal valve, and

passage through the colon would not be likely to change it. The smell of guaiacol was noticed in the stools of nearly all of these patients. It has been my practice to give the pure guaiacol in emulsion. This is rather a disagreeable dose, and some objected so seriously to its use that I was forced to give it in capsules; when this was not expedient, then I gave the carbonate of guaiacol dry upon the tongue in 2½-grain doses. I have never found this to disagree with the stomach, and patients do not offer any objection to taking it.

In summing up this question I feel convinced of the following facts:—That guaiacol, when locally applied in typhoid fever, is certain to reduce the temperature. That, with the care that a physician should always use in the administration of drugs, it is absolutely safe. That chills will not occur if the temperature is not reduced below 100°. That no deleterious effects are produced upon any organs of the body by its use. That it is easy to apply and can be used by any one competent to nurse a typhoid-fever patient. That there are no depressing effects following the use of the drug, if used intelligently. That by its continued use the dose can be gradually lessened. That it is far superior to the cold bath, in that it can be used by one person; it is fully as effective as the cold bath; patients are not subjected to the danger of moving; there is no complication such as hemorrhage, &c., that is a contra-indication to its use. That when given internally it is one of the best, if not the best, intestinal antiseptics known. By its use in typhoid fever the dry tongue and tympanites are abolished, rendering digestion and assimilation more perfect, and reducing the probabilities of hemorrhage to almost *nil*.

21.—SHORT NOTES OF TWO CASES OF OPIUM POISONING.

By James Ritchie, M.D., M.R.C.S.Eng., &c.

[Read before the Medico-Chirurgical Society of Edinburgh, June 3, 1896.]

The following two cases of opium poisoning seem to possess features of sufficient interest to warrant the presenting short notes of them to the Medico-Chirurgical Society:—

Case 1.—About 6.30 on the morning of April 12, 1895, I was hurriedly summoned to a case, said to be one of poisoning. I took with me a syphon apparatus for washing out the stomach, and on arriving at the house was informed that the patient had dined heartily the previous evening about seven o'clock, that some hours later he had experienced severe pain over the heart, for which he had taken a dose of laudanum, and the friends were afraid that he had taken an overdose. The patient, a gentleman of about 40 years of age, was in bed, pale, breathing slowly,

pin-point pupils; he could be roused with difficulty, answered in monosyllables, and if left alone relapsed at once into somnolence. I at once injected subcutaneously about $\frac{1}{60}$ grain of atropine sulphate, got him out of bed, and with some trouble kept him awake in a chair until the œsophageal tube was passed and the stomach was washed out. A large quantity of partially digested food was removed with some difficulty, because of the occasional blocking of the tube. The material smelt strongly of opium, and it contained a large amount of mucus. The stomach was washed out till the water returned almost clear, then strong coffee was given, and assistants were obtained to keep the patient walking about. As the pupils were still small, a second subcutaneous injection of atropine was given, on this occasion $\frac{1}{120}$ grain. In the forenoon the patient was still drowsy, and craved to be allowed to sleep. As the day advanced he was permitted to rest at intervals. In the evening he was out of danger, and allowed to go to bed. It was found that the dose of laudanum taken was 2 oz. Although he had occasionally taken small doses for sleeplessness, he was not in the habit of using opiates.

The chief point of interest in this case is that although a large dose of a fluid preparation of opium was taken at night, it was found that six or seven hours afterwards the stomach still contained a large quantity, and therefore the symptoms of opium poisoning were not so profound as might have been expected in view of the long time which had elapsed after the taking of such a dose. The explanation is doubtless—First, that the dose had been taken when the stomach was full of food; second, that in consequence of well-marked gastric catarrh the dinner was only partially digested, and for the same reason only a small portion of the laudanum had been absorbed. This is a demonstration on a somewhat large scale of facts with which we are conversant in practice, viz., that for the immediate relief of severe pain in a patient who has much in the stomach, or in one who is the subject of severe gastric catarrh, it is of little avail to give morphine by the mouth. In such cases it should be given hypodermically.

Case 2.—On July 24, 1895, I was called between one and two o'clock a.m. to see a somewhat small man who had taken, not very long previously, about an ounce and a half of laudanum. He presented the ordinary symptoms of opium poisoning. The pupils were very small. He could be roused without much difficulty, but could not be made to give any account of his previous proceedings, and when left alone he at once fell asleep. Having shortly before that time read in the *British Medical Journal* a paper by Dr. Moor, of New York, on "Permanganate of Potash as an Antidote in Opium Poisoning," I gave in a large cupful of water, about an ounce of Condy's fluid which was fortunately at hand in the patient's house, then went to get my syphon apparatus. Immediately after returning, the patient's stomach was washed out until water, with a small quantity of Condy's fluid added to it, returned unchanged in colour. A little Condy in water was then given to drink, and the patient was kept moving. He remained drowsy until the forenoon.

This case seems to afford a good example of the power of potash permanganate to render innocuous preparations containing morphine.

Dr. Moor (*British Medical Journal*, June, 1895, p. 1369), after having experimented with morphine preparations, convinced himself that the morphine is oxidised, and that the manganese

salt is reduced to hydrated manganese dioxide. He found that sulphate of morphine is decomposed much more rapidly than albuminous matter, such as white of egg—that one grain of permanganate oxidises one grain of morphine. Such confidence had he in the power of this remedy that, although he is very susceptible to the action of narcotics, he took on one occasion 3 grains of sulphate of morphine, followed in thirty seconds by 4 grains of potassium permanganate; and on another occasion, two hours after breakfast, he took 5 grains of sulphate of morphine, followed in a few seconds by 8 grains of the antidote dissolved in 8 ounces of water, and in neither case did he experience any effect from the narcotic.

[For paper above referred to, see *Retrospect*, Vol. cxii. (1895), p. 166.—Ed. *Retrospect.*]

Recently in the *British Medical Journal* (May 16, 1896, p. 1193), Dr. Luff, of St. Mary's Hospital, records a series of experiments in which he mixed a known quantity of morphine acetate with vomit, and after thorough agitation a known quantity of potassium permanganate in solution was added. After a time careful examination was made, but not the faintest trace of morphine could be discovered. These experiments demonstrated that this salt of morphine is more readily oxidised than other stomach contents. Dr. Luff advises that if laudanum has been taken and the quantity is known, 6 grains of permanganate should be given for every ounce of laudanum, that the stomach should be washed out, and as morphine is partly excreted into the stomach, it should be washed out two or three times at intervals of half-an-hour. As the antidote seems to be so certain in its action, such an unpleasant proceeding is surely unnecessary. Is it not sufficient after the first washing to give small doses to be swallowed?—*Edinburgh Medical Journal*, *July*, 1896.

22.—THE WINTER RESORTS OF SWITZERLAND.

By D. J. Leech, M.D., D.Sc., F.R.C.P.,
Professor of Materia Medica and Therapeutics at
The Owens College, Manchester.

[The following is extracted from Dr. Leech's valuable paper, based on personal experience:]

The health resorts of Switzerland may be divided into three classes:—(1) Those which are not high, and in which the winter is milder than in England; (2) those which are at a moderate height, 1,500 to 3,500 feet above the sea, and where the snow

lies throughout the winter; (3) the high health resorts, 3,500 to 6,000 feet above the sea, resembling Davos to some extent in their characteristics.

The only part of Switzerland where the winter is mild is the eastern portion of the north shore of the Lake of Geneva. Here lie the villages of Clarens, Vernex, and Territet, often collectively alluded to as Montreux. They are protected from the north and east winds by the southern spurs of the Jaman range, which rise to the height of 3,000 to 5,000 feet above them. They fringe the lake with a continuous series of houses, and extend backwards on the rising ground to a greater or less extent.

The rainfall is small, and the number of sunny days is very large. It has been found that the rainy days in the year average about 60, whilst of southern English watering-places, as, for example, Torquay, Ventnor, and Hastings, they are estimated at from 150 to 180.

The winter does not usually begin till late in December, sometimes not until January. November and the first part of December are usually fine, clear, and warm; but at the end of November and in December the nights are often frosty. In January and February snow usually falls, and not unfrequently lies some days. Foggy weather from time to time occurs, but there are many bright sunny days, and cold winds are not common. On the whole, however, the weather cannot be compared with that of the Riviera at this time of the year. Early or late in March the spring commences, and April and May are usually charming months in Montreux.

Until nearly Christmas Montreux is usually a good place for those subject to bronchitis and catarrhal affections, and those who wish to escape the cold and wet of an English winter. It is suitable for the early forms of phthisis until December, and sometimes later, and many stay here on their way to the Riviera; but in January and February it is by no means a typically good place for chest affections.

Of the villages which constitute what is known as Montreux, Territet, which lies at the extreme east, is the most protected; Clarens the least so.

The northern shores of the lake are to a considerable distance protected to the west of Montreux, and Vevey, which lies a few miles distant, is much resorted to. The winter here is not so mild as at Montreux, but many people, with slight chest affections, live here during the colder months, and find excellent hotel accommodation.

Above Montreux lie two places which may be included in the second class of winter health resorts (those lying 1,500 to 3,500 feet above the sea)—viz., Les Avants and Mon Caux.

Les Avants is a charming place for winter quarters. It is situated a few miles from Montreux, at a height of about 3,000 feet, on a plateau which is surrounded on all sides except the south by hills. Snow begins to fall here usually towards the end of November, and the place is subsequently snowclad till the end of February or the middle of March, but occasionally it does not fall till the end of December.

The average temperature at Les Avants is, as might be expected, somewhat higher than at places like Davos, which lie between 5,000 and 6,000 feet above the sea. The minimum temperature does not fall so low, and the maximum temperature registers 2° to 3° above that of Davos. But in the large amount of sunshine with which it is favoured, Les Avants rivals Davos. As in many of the high places in Switzerland, the stillness of the air is very remarkable, and the atmosphere is wonderfully clear. Occasionally, indeed, fogs roll upwards and envelop the place, but they are usually of very short duration.

Les Avants is not a resort for sufferers from pronounced phthisis; it is a winter residence for those who require a dry, tonic climate, and who are not seriously ill.

People who suffer from disturbance of nutrition, due to sluggishness of tissue change, with constipation and dyspepsia, are often much benefited; so too are those in whom the nervous system chiefly suffers, as shown by hypochondriasis, or a condition of depression alternating, it may be, with irritability. Those, again, who are troubled with constantly occurring catarrhs, or relaxed and granular throat, receive much benefit. People with a phthisical family history and depressed nutrition resort to Les Avants with advantage. So too do those who have suffered from hæmoptysis, but have no lung softening or cavity. It is quite possible that early cases of phthisis might be benefited, but, as a rule, phthisical patients are sent to the higher resorts.

The success of Les Avants as a health resort in summer and winter has led to the erection of a still larger hotel at Mont de Caux, some miles to the east of Les Avants.

The next place in the second class I have to mention is Sierre, which, though only 1,800 feet above the sea, has a winter climate in many respects resembling that of the higher Alpine districts, the air being still, the weather bright and sunny, and fogs almost unknown.

Spurs of the northern mountains, projecting into the valley at and above Sion, give such protection that the west winds have lost their force before they reach Sierre. Just beyond Sierre the heights which form the southern boundary of the valley, project considerably, sheltering the town to some extent from the influence of easterly winds, the more so since further on (from Leuk to Brieg) the valley runs directly eastward.

The value of Sierre as a health resort in the autumn and spring months depends upon the dryness of the air and its tonic character, and the large number of bright, clear days. In the winter there is very little wind, and haze and fog, so far as I have known, are entirely absent at Sierre itself. The average temperature in October and November is lower than at Lugano, though distinctly higher than at Davos. Sierre is useful for those who have relaxed throat and suffer from chronic catarrhal conditions, and for chronic nervous dyspeptics. Patients can spend the greater part of their time out of doors without feeling cold though snow is on the ground, and there is abundant opportunity for outdoor exercise, for the roads and paths are kept passable over a large area, and there is every opportunity for skating and tobogganing. It is not a place for phthisical patients where the general health is markedly injured, but it may with advantage be resorted to by weakly patients in whom there is suspicion of phthisis, and where there is old pleurisy and induration of the lung after inflammatory processes—cases, too, in which there has been hemorrhage, with slight signs of phthisis, I have found do very well at Sierre. Sierre is fortunate in possessing a good water-supply and fair sanitary arrangements.

I now turn to the third class, the higher health resorts, of which by far the most important, of course, is Davos am Platz. It is not my intention to give any account of this well-known place, which has proved so well adapted for the treatment of chronic phthisis, but I may just allude to a few points which it is necessary to bear in mind when considering the respective advantages of other Swiss health resorts. Davos is essentially devoted to the treatment of consumption ; it is quite true that many who are not consumptive spend the winter there, and that social amusements are a marked feature in the life of the place. But at Davos every arrangement exists for dealing with phthisis and the accidents of phthisis. Skilled medical men of all nationalities practise there, and patients have the benefit of careful treatment as well as climatic advantages. Most forms of chronic phthisis receive benefit at Davos, but the much debilitated, or those with raised temperature, should not be sent there. It has now long been known that cases of hæmoptysis often do well at high altitudes, and a tendency to attacks of bleeding from the lung is in itself no bar to a residence at Davos. Besides those who suffer from phthisis, patients convalescing from illness, or suffering from laryngeal catarrh or chronic lung consolidations, and from generally depressed health without definite chest troubles, are often found at Davos deriving benefit from the bracing air. But those with a very weak circulation, those who suffer from chronic bronchitis, especially

when advanced, or with a tendency to attacks of acute bronchitis or rheumatism, should not, as a rule, be sent there. A mile distant from Davos Platz is Davos Dorfli, more sunny and quieter than am Platz, but somewhat more exposed to wind; and eleven miles further down the valley is Wiesen. A few hundred feet lower, and slightly warmer than Davos, it is said to be very delightful even in February, and still more so as the spring advances.

St. Moritz, nearly 6,000 feet above the sea, has been for many years used as a health resort for the same class of ailments as Davos. The hotels of St. Moritz-bad are not open during the winter, but those in the village (St. Moritz-dorf) receive visitors throughout the year. Many suffering from early forms of phthisis pass the winter there, the atmospheric conditions being much the same as at Davos. But more go to St. Moritz for the benefit of its bracing air, and invalids form a very much smaller proportion of the visitors than at Davos. It is well adapted for those who can enjoy outdoor sports, but hardly so well for the systematic treatment of phthisis as Davos, although skilled medical assistance can always be obtained. An English physician resides here throughout the winter.

Although visitors of all kinds are received at the Grand Hotel, Leysin, it is specially adapted for consumptive patients, and when I was there last Christmas, out of 126 visitors, 84 suffered from consumption. The most complete arrangements are made for their treatment. There is a special apparatus in every bedroom for ventilation and for warming the air, and extending along the whole front of the building, and therefore looking southward, is an open verandah, provided with couches on which patients, when not taking exercise, recline in order to receive the full benefit of the Alpine air and bright sunshine. In the grounds, too, are placed sun-boxes, and every possible means is taken to promote the comfort of those not strong enough to take active exercise.

In order to prevent the evils which might arise from the congregation of so large a number of phthisical patients, special precautions are taken with regard to the expectoration. Each phthisical patient is required to carry a small vessel, into which he may expectorate, and is strictly forbidden to make use of the handkerchief for this purpose, or to expectorate in the passages or grounds; and receptacles, containing perchloride of mercury solution, for sputum are distributed throughout the building. Every night the pocket vessels are left by each patient outside the bedroom door, and cleansed with perchloride of mercury solution before morning. There is a resident physician, who speaks English, and all invalids are under careful medical supervision. The place is well adapted for phthisical patients

requiring careful treatment as well as Alpine air. It suits well cases where there is a tendency to hæmoptysis, but those having a raised temperature should not be sent to Leysin. The resident physician informed me that rise of temperature was treated by continuous rest in bed, and if the temperature did not subside under this treatment patients were, as a rule, forthwith sent home.

About three hours' journey above Sierre is the newest of the high health resorts, Montana, 5,000 feet above the sea, which differs considerably from any of the places I have so far mentioned. So far as climatic conditions go, no winter resort in Switzerland excels Montana. It is so open that it has long hours of sunshine even in the depth of winter, yet it is thoroughly protected. Of course the air is not always still at Montana, but in winter the wind is as little felt as at Davos. But the place has some disadvantages. Walking exercise is limited to a few paths, which are cut through the snow near the hotel; the sparseness of the population does not at present allow the clearance of many of these paths; and unless a visitor can use snowshoes or enjoy spending much time in tobogganing or skating, the place might soon become monotonous. There is no medical man nearer than Sierre, with which place, however, there is, of course, telephonic communication. Even in summer, as I have said, there is no carriage road to the hotel, and in winter, when the snow has freshly fallen, progression on mule-back is somewhat tedious. But Montana is a magnificent place for those who are fairly healthy, and a time will come when it will be better adapted for invalids than at present. At present the isolation and monotony of the place should prevent its being used as a resort for serious invalids.

In the remarks I have made with regard to Swiss winter resorts, it has not been my intention to define minutely the medical capacities of each place, but only to give a general idea of these, and point out other circumstances connected with them, fitting them more or less for various classes of cases. Each place has its peculiarities, its advantages, and disadvantages. It is sometimes inconvenient if these are not known when coming to a decision as to the place to which a patient shall be sent. To advise a dyspeptic or nervous man to go to Leysin, or a patient requiring medical attendance to one of the less frequented high health resorts, might lead to very unsatisfactory results, and it is because I have, on more than one occasion, fallen into error from want of knowledge with regard to the general as well as the climatic character of health resorts, that I have thought it might be well to record the personal experience I have gained from several visits to Switzerland in the winter.—*Medical Chronicle, June*, 1896.

23.—THE PATHOGENICITY OF THE DIPLOCOCCUS LANCEOLATUS.

[The following is a leading article in the *Medical Record*, September 5, 1896:]

That the presence of a micro-organism is not necessarily an indication of the existence of disease cannot be better illustrated than by the varying behaviour of the diplococcus lanceolatus, or the pneumococcus. This organism, as is well known, is often to be found in the mouths of apparently healthy individuals, presumably giving rise to diseased conditions when the usual relation between its virulence and the bodily resistance is changed—either the former increased or the latter diminished, or both of these conditions are operative. Other organisms, it is true, may also give rise to pneumonia, but the capsulated diplococcus is the most common exciting factor.

It is generally recognised that the pneumococcus is responsible for many of the complications of pneumonia, as well as of a number of independent disorders. This organism is possessed of pyogenic properties, as some of the conditions referred to are further attended with suppuration, the pus being characterised by its viscidity, plasticity, and greenish colour.

Simple uncomplicated pneumonia must be viewed as a purely local process in the majority of cases, although a number of observers have succeeded in finding pneumococci in the blood. That generalised infection does not take place more commonly is to be attributed to a relative immunity on the part of human beings. In order for such infection to result—that is, for the pneumococcus to undergo multiplication in the blood and to exercise pathogenic activity—either the micro-organism must possess increased virulence or the patient must manifest congenital or acquired predisposition, or contra-immunity. Cases in which the conditions just named prevail are so uncommon that an observation recently recorded by Schabad (*Centralblatt für Bakteriologie*, No. 25, 1896) seems for this and other reasons to be of unusual interest.

A man, 45 years old, was suddenly seized with chill, fever, cough, and expectoration, together with pain in the right side of the chest. On the second day he complained of pain in the right hip-joint and on the fourth day also of pain in the left knee-joint. Physical examination made on the sixth day showed the area of cardiac percussion dulness to be increased toward the left, while the heart sounds were obscure, the pulse was frequent, and the vessels were atheromatous. Dyspnœa was pronounced and the percussion resonance over the upper lobe of the right lung was impaired, while the breathing was bronchial and subcrepitant râles could be heard. At the base of the left

half of the chest in the axillary region pleural friction sounds were audible. The temperature was moderately elevated. Inoculation of agar tubes with blood obtained under suitable precautions resulted in the development of pneumococci, which in turn yielded typical cultural and pathogenic reactions. The case terminated fatally and post-mortem examination disclosed the following conditions:—Acute fibrino-purulent pericarditis; beginning parenchymatous and fatty degeneration of the heart; atheroma of the aorta; chronic pleurisy on the left and acute pleurisy on the right; croupous pneumonia involving the upper lobe of the right lung in the stage of gray hepatisation with suppuration; acute purulent peritonitis; cirrhosis of the liver; chronic hyperplasia of the spleen; fatty degeneration of the kidneys; purulent coxitis on the right and purulent gonitis on the left. The pus from the joints from the abdominal cavity and from the pericardial sac was thick and yellowish, with a tinge of green. Smear preparations and agar inoculations from the pneumonic lung, from blood from the heart, from the splenic pulp, from the pericardial and the peritoneal exudates, and from the pus from the joints all disclosed the presence of pneumococci. In some of the cultures the bacterium coli commune also developed.

DISEASES OF THE NERVOUS SYSTEM.

24.—THE QUESTION OF COMMITMENT OF THE INSANE.

[The following is a leading article in the *New York Medical Journal*, August 22, 1896:]

At the recent meeting of the Congress of Alienists and Neurologists of France, a report of which appears in the *Presse médicale* for August 1, M. Garnier read a paper on this subject in which he enumerated the conditions requiring the confinement of the insane as follows:—The two forms, elementary or primary, mania and melancholia are the first which demand early confinement, especially in acute cases, in which the patients are sometimes very demonstrative. In these cases the family should be informed, and the possibility of a rapid improvement mentioned if the patient is sent to an asylum. Melancholia, in its most masked forms, is perhaps the mental disease for which the expediency of confinement is most uncertain; it requires

much tact and experience. According to the opinion of the majority of clinicians, lypemania of slight intensity may be cured without confinement in an asylum.

General paralysis is distinguished rather by dementia than by delirium; that is to say, rather by the annihilation of the mental activity than by its deviation; it is not rare, either, to meet with general paralysis in which there is no delirium. It is possible that such patients may be cared for outside of an insane asylum; however, during the early period of the disease there may be a true maniacal excitation which leads to acts of violence and demands the patient's confinement in an asylum.

Senile dementia and mental weakness due to limited cerebral lesions are a cause of much embarrassment. There is nothing, it may almost be said, to be done for this class of patients. There should be in large cities an establishment somewhat like a hospital in which patients of this class may be placed immediately, an institution which does not come under the regulations that apply to the insane.

Persons with delusions of persecution, whether they belong to the distinctly defined or limited type of chronic delirium or progressive systematic psychosis; whether they betray by the nature and the method of evolution of their delirious conceptions, hereditary degeneration, are those for whom confinement is particularly urgent.

There are persons who ask to be confined in an asylum, and they are generally those in whom the disease is hereditary or degenerates tormented with a fixed idea urging them to suicide or homicide, and very frequently it is advisable to comply with such demands.

A rather complex question is that concerning the assistance and the confinement of epileptics. Strictly speaking the latter applies only to insane epileptics, while the former is due to poor patients who are suffering with simple epilepsy only.

Hysteria, with its varied aspects, its protean course, its exceedingly sudden changes, and its exacerbations, gives rise to the greatest difficulties in regard to the expediency of confinement. One fact is certainly recognised, and that is that there is no greater obstacle to recovery in this disease than living at home. If hysteria is accompanied by mental troubles that may be included in the term hysterical mania, if there are cerebral disorders and hallucinations, in which condition the suicidal and even homicidal impulse is not rare, confinement is indicated. However, this sensorial delirium is very often connected with a convulsive paroxysm, and in such cases it is advisable not to be too hasty. This paroxysmal mania is generally of short duration, and at the end of two or three days

the storm becomes calmed. As regards hysterical persons whose entire existence is passed on the border line of insanity, who are neither sane nor yet insane, very frequently it is expedient to refuse them a commitment.

The increasing number of degenerates, of feeble-minded, of imbeciles, and of idiots has become a source of embarrassment and great annoyance. They are confined not only for their feeble-mindedness, but especially when a maniacal attack occurs, when there are epileptic attacks, sensorial troubles, &c. When these symptoms have disappeared the patients leave only to return again after a comparatively short time.

Analogous remarks may be made in regard to alcoholic subjects. Alcoholic delirium is the most frequent form of mania. A person suffering from acute alcoholism presents the most dangerous form of insanity from the first appearance of the sensorial troubles, and confinement in such cases is advised. But it is of short duration, for the symptoms disappear rapidly at the end of a few weeks.

It may be seen that the term dangerous as applied to different classes of insane persons is not sufficient to determine exactly which persons should be confined to the exclusion of others, although, on the one hand, it can not be affirmed that an insane person reputed to be inoffensive may not become dangerous at any moment, and, on the other hand, it is a duty for the hospitals to render assistance to the poor insane who need special care.

25.—TWO CASES OF BRAIN TUMOUR IN WHICH RECOVERY TOOK PLACE.

By T. K. Monro, M.A., M.D., Assistant Physician to the Glasgow Royal Infirmary.

[The following is extracted from Dr. Monro's paper. In the last number of the *Retrospect* two cases of recovery from intracranial tumour were reported:]

The word recovery is here used to indicate that in each case the patient ceased to be troubled by any symptom except blindness, and became able to lead an active life and enjoy it.

Case 1—Summary.—Headache; vomiting; bilateral acute optic neuritis passing into consecutive atrophy; persistent bilateral absence of knee-jerk; slight paresis of left oculomotor nerve; disappearance of all symptoms except blindness and absence of knee-jerks.

F. N., schoolboy, first came under observation at the Dispensary of the Royal Infirmary, in February, 1895, when he was nearly 7 years old. The following account of his condition is from notes taken on February 25, 1895 :—Patient had a fall last summer (1894), and struck the left side of his forehead; he enjoyed good health until his present illness began about two months ago. The first symptom complained of was pain in the fore part of the vertex of the head. This pain occurred daily, persisted for a couple of hours, and then passed off, apparently completely. In the earlier part of his illness his sleep was sometimes interrupted, sometimes actually prevented, by the headache, but he is not known to have cried out during his sleep. He suffered much from vomiting, and rejected everything, even a drink of water. This symptom was entirely removed by subnitrate of bismuth and bicarbonate of sodium, which he got at his first visit to the Dispensary, three days ago. On the 3rd inst. (three weeks ago), patient began to complain of darkness of vision. With the left eye he cannot count fingers at a few inches, but he can do so with the right. Both pupils are somewhat large, the left being perhaps the larger of the two. There is no strabismus, and no complaint of diplopia. Ophthalmoscopic examination reveals double optic neuritis, with some extension of the inflammation on to the retina, and occasional hemorrhage. There is no paralysis of the face. The grip of the left hand is rather stronger than that of the right, but patient is said to be left-handed. The knee-jerk is not obtainable on either side (Jendrassik), but it is not certain that this is not due to lack of intelligence on the part of the patient.

Treatment.—Hydrarg. subchlor., $\frac{1}{6}$ gr.; sodii bicarb., $2\frac{1}{2}$ gr. M. et ft. pulv. Sig.—One powder night and morning.

In the middle of March, 1895, it was noted further that there were no fits or giddiness, no ataxy on standing or walking, no local tenderness of the head, no affection of speech or hearing, no impairment of sensation in the face or of the ocular movements, no paralysis, spasm, or muscular atrophy (apart from some general emaciation), no affection of the sphincters, and no albuminuria. The blindness, however, was at least as great as before; the optic neuritis was still an acute affection, but the swelling in the situation of the disc was becoming white, particularly in the case of the right eye.

Two months later (May, 1895) vomiting had quite ceased, and headache was very occasional. The left eye was now found to be rotated slightly upwards as compared with the right, and, moreover, there was a suspicion of slight divergent strabismus. Optic neuritis was passing into consecutive atrophy, with white discs and narrowed vessels. The state of vision was nearly as at present (April, 1896).

In March, 1896, patient was still keeping well, and, apart from his blindness, would pass for a very healthy boy. Strabismus and the upward rotation of the left eye were no longer to be seen, but slight nystagmoid movements could be observed from time to time; otherwise there was no impairment of the ocular movements. The right pupil was slightly large, and contracted distinctly to the direct stimulus of light, but scarcely at all consensually. The left pupil was rather larger than the right, and responded very slightly indeed to the direct stimulus of light, but contracted freely when light was admitted to the opposite eye. Fingers could not be counted with either eye. The sense of light and darkness, as tested by daylight in a room, was preserved to the right eye, but lost to the left. Both knee-jerks were completely absent (Jendrassik's test).

Commentary.—These symptoms, though few in number, constitute, I think, a combination which can only be due to the presence of some new growth within the cranium. Accurate localisation is not possible at present, but the interference with the knee-jerk suggests a lesion of the cerebellum, which is a very frequent seat of tumour in children. Experimental and pathological facts show that a lesion of one cerebellar hemisphere may cause loss of the knee-jerk on the opposite side or on both sides. But tumours of the middle lobe may cause continuous or intermittent absence of the knee-jerk, so that, even if we venture to suspect the existence of a tumour in the cerebellum, we can affirm nothing as to which part of the organ is its seat. Paresis of the left third nerve, on the other hand, suggests a lesion in or near the left crus, but it must be remembered that cerebral tumours are often multiple. It is by no means rare for tumours of the brain to become stationary, and this is specially true of tubercular growths; but that these are not the only variety that may cease to grow will be shown immediately.

Case 2—Summary.—Illness characterised by severe ad symptoms almost, if not absolutely, characteristic of intra-cranial tumour; recovery and thereafter good health, except during an attack of typhus, for about 45 years; death from cancer of pylorus; myxoma found in cerebellum.

Jas. R. consulted me at the Dispensary of the Royal Infirmary, in August, 1895, on account of gastric symptoms, epigastric pain, vomiting, hiccough, &c., of three months' duration. He had also been losing flesh during the same period. To complete his history as regards the gastric affection I may now add that, as the dyspepsia continued severe in spite of treatment, I sent him into the hospital, where he came under the care of Dr. Lindsay Steven. On October 25 an abdominal section was performed for diagnostic purposes, and also with a view to pylorectomy if

the conditions should prove favourable, but the latter procedure was decided against. The general strength gradually failed, and death took place on December 16.

The following account is from notes taken in the first week of August :—Patient, who is aged 63, has worked for 33 years in the Blind Asylum. His previous health—since the time when he lost his sight—has been good, though not very robust. He is blind of both eyes, though retaining a sense of light and darkness. The pupils are somewhat large ; each contracts actively on exposure to light.

Ophthalmoscopic Examination.—Both discs are perfectly white, like paper. The vessels are little if at all contracted. The discs are not obviously contracted in diameter. There is a posterior staphyloma in each eye around the inner margin of the disc. Patient regards his left eye as the "weaker" of the two. The knee-jerks are normal. Blindness set in at the age of 16, in the course of a severe illness which confined him to bed for twelve months. For three or four months of this time he knew no one. It appears to have been a severe head affection impairing—for the time, at least—hearing, smell, and the strength of the left side especially, as well as sight. There was severe headache, but patient does not remember about vomiting. Weakness was the first symptom. He thought his illness was brought on by playing in the open air with cold and wet feet after working in the pit. The family history throws no very distinct light on the case.

Intracranial tumour, which is the most common cause of severe optic neuritis, such as might lead to the optic atrophy met with in this case, is almost the only condition that would account for the illness which this patient had at the age of 16. It is conceivable that some rare form of meningitis or some other rare condition might produce similar results, but from the point of view of relative frequency, the probabilities are overwhelmingly in favour of that common affection, cerebral tumour. Indeed, the one remarkable feature about this illness, though by no means a rare occurrence in connection with tumours of the brain, is that it ended in recovery.

The symptoms, therefore, that this patient complained of in his last illness all pointed to the abdomen and not to the head. The sole purpose for which the head was opened at the autopsy was to ascertain what remained of the lesion which was so terribly active 46 years ago, and had been absolutely at peace ever since.

From Dr. Workman's post-mortem report :—"The brain was removed, and a myxomatous tumour found, almost replacing the left half of the cerebellum. The optic chiasma and nerves were markedly atrophied. The ventricles were found to contain an

excess of fluid, but the cerebrum otherwise presented healthy characters."

All the evidence, then, points clearly to the conclusion that the patient's illness at the age of 16 was due to the myxoma of the cerebellum. This tumour involved the left lobe, and the patient told me that the weakness in that illness affected specially the left side. It is well known that a cerebellar tumour on the left side may cause paresis of the right side of the body by pressing upon the pyramidal tract above its decussation; but there is experimental, pathological, and clinical evidence to show that a destructive lesion of the cerebellum on one side may directly, and without interfering with any other part, cause paresis on the same side of the body. (See J. S. Risien Russell, *British Medical Journal*, May 18, 1895, pp. 1080-1081.)

In the present case the myxoma, after a time, ceased to progress, and the patient recovered from all his symptoms except his blindness, which was perpetuated by the optic atrophy; this atrophy followed, we may be certain, upon optic neuritis. After many years of health and activity, his death was brought about by a new tumour, of a different kind, and in a different situation—a cancer of the pylorus.—*Glasgow Medical Journal, September*, 1896.

26.—A CASE OF ENCAPSULED TUBERCULAR TUMOUR OF THE BRAIN; CESSATION OF THE UNILATERAL CONVULSIONS, WHICH HAD BEEN CAUSED BY THE GROWTH.

By R. T. Williamson, M.D. Lond., B.S., M.R.C.P., Medical Registrar, Manchester Royal Infirmary; Hon. Medical Officer, Pendleton Dispensary (Salford Royal Hospital).

[Dr. Williamson's interesting paper provides further evidence of the occasional arrest of a tuberculous intracranial tumour, and should be read in conjunction with the foregoing paper.]

The following case furnishes a good example of a tubercular cerebral tumour becoming encapsuled. The clinical and pathological notes show that a tubercular tumour, which has given rise to well-marked symptoms, may become encapsuled, that the symptoms caused by the growth may then almost entirely disappear, and that, as far as the encapsuled growth is concerned, the patient may be considered practically cured. In the lungs, old healed tubercular nodules are not infrequently met with post-mortem, and in the following case it would be almost

equally correct to speak of a healed tubercular nodule in the cerebrum, though at a later date the patient died of tubercular disease elsewhere.

During life the man was an in-patient at the Manchester Royal Infirmary, under the care of the late Dr. Ross, who kindly gave me permission to record the case. The following are the notes which I took whilst the patient was in the Royal Infirmary:—Anthony T., aged 27, admitted into the hospital June 19, 1890.

History.—Four years before admission the patient began to suffer from epileptiform fits. Each attack commenced with a peculiar sensation in the left side of the face; then this sensation was felt in the left arm, and afterwards in the leg. Consciousness was lost during the attack, and the tongue was frequently bitten. His friends told him that convulsive movements occurred during the fits, but were limited to the left side. The attacks were, therefore, unilateral, or Jacksonian epileptiform fits. After the patient recovered consciousness he generally found the left side paralysed, and the paralysis usually persisted for about one hour and then disappeared. The fits were frequent at first, and the vision became gradually impaired, and for a long time the patient was unable to follow his employment. At the end of 18 months the fits gradually became less and less frequent, the vision improved, and the patient returned to his work, but there was a very slight loss of power on the left side. About six months before admission to the hospital he first noticed a little unsteadiness in walking. This became well marked about four months later, and then vomiting became a troublesome symptom. Vision again became much impaired three months previous to admission. There had been no affection of the bladder. The patient had taken alcohol in excess until eight months ago. There was no history of syphilis or of ear disease.

Condition on admission to the hospital, June 19, 1890.—The patient complained of severe pain in the head and loss of sight. He was unable to sit up in bed and unable to stand or walk without assistance. When well supported he was able to walk a little, but was ataxic, and there was a tendency to fall backwards and to the left. He was badly nourished, and the evening temperature reached 102° F. On showing the teeth, the right angle of the mouth was retracted slightly more than the left, and the right naso-labial fold was a little better marked than the left. There was no affection of the upper facial muscles. The tongue deviated slightly to the left when protruded. All the movements of the limbs could be performed quite well, but those of the left arm and leg were not quite so powerful as those of the right. The knee-jerk and wrist-jerk

were greater on the left side than on the right. There was a slight ankle clonus (but not sustained) on the left side. Both plantar reflexes were present. There was slight rigidity to passive movement in the left leg.

Sensation.—The head and point of a pin were felt, localised, and differentiated quite well on both sides of the face and on both arms and legs. The muscular sense was not affected. The smell of camphor was recognised at each nostril. There was no paralysis of the ocular muscles. The left pupil was larger than the right; both reacted to light. Vision was greatly impaired, and the patient was unable to count fingers held six inches in front of the eyes.

On ophthalmoscopic examination very marked double optic neuritis was found. Hearing was fairly good; the tympanic membranes were normal. The circulatory system was normal. At the apex of the right lung, anteriorly, a few subcrepitant râles were heard. The urine was acid, sp. gr. 1,020, no albumen, no sugar. The bladder and rectum were not affected.

Soon after admission I found that the expectoration contained numerous tubercle bacilli. At first the lung symptoms and signs were very slight, but soon the cough became very troublesome, and the patient much worse. On July 1, examination of the lungs revealed dulness at the right apex and submucous râles. In the fourth space on the right side there was also dulness, and submucous râles were heard. The inspiratory sound was very harsh, but the breathing was not truly bronchial. The patient rapidly sank, and died on July 17, 1890.

Autopsy (abstract).—Body greatly emaciated. Brain:—Left lobe of cerebellum adherent to the dura mater. Basal ganglia and base of brain normal. The lateral and third ventricles distended with clear serous fluid. In the white matter of the right cerebral hemisphere, just beneath the lower third of the right ascending frontal convolution, was a yellowish, oval, moderately firm caseous tubercular nodule. Its antero-posterior diameter was half an inch; transverse diameter (right to left), $\frac{7}{8}$ in.; vertical diameter, $\frac{5}{16}$ in. It extended to a point only $\frac{1}{8}$ in. below the surface of ascending frontal convolution, and therefore at this spot just involved the grey matter. The nodule was surrounded by a very dense, firm fibrous capsule tissue of considerable thickness. Microscopically, the nodule was found to consist of caseous material and the capsule of a very thick fibrous tissue. In the outer half of the left lobe of the cerebellum was a caseous tubercular mass, the size of a small pigeon's egg. The mass was softened in the centre, and was not surrounded by any fibrous capsule. The rest of the brain was normal. Chest:—Tubercular consolidation at the apex of

the left lung. The rest of the left upper lobe was studded with miliary tubercles; the lower lobe was also studded with tubercles. Right lung adherent to the pleura at all parts, and almost completely consolidated. Heart normal. Well-marked signs of tubercular peritonitis. Liver, spleen, and stomach presented no changes of importance. Numerous tubercular ulcerations in the mucous membrane of the small intestine.

Remarks.—In the case above recorded the attacks of Jacksonian epilepsy, at the early period of the illness, were evidently caused by the tubercular mass in the motor region of the right cerebral hemisphere. The fits ceased, and the patient improved so much that he was able to return to his work, and the autopsy (made four years after the onset of the fits) showed that the tubercular mass had become encapsuled and practically quiescent. Unfortunately, however, at a later date, a second tubercular mass had developed in the cerebellum, and also tubercular disease in the lungs.—*Medical Chronicle, September*, 1896.

27.—TREATMENT OF GRAVES'S DISEASE.

[The following is taken from Dr. Dreschfeld's Notes on Graves's Disease:]

As Graves's disease is, after all, not a very fatal disease, and as marked improvement, lasting for a longer or shorter time, is often noticed, it is easy to understand that to the particular drug that was given, or to the line of treatment adopted at the time, is ascribed the improvement noticed in the condition of the patient; and hence the number of remedies is very large, and the opinions of the various authors as to their efficacy widely different.

General Treatment.—It is most important to give the patient mental and bodily rest, and to attend to the general nutrition. A prolonged rest in bed has been advocated by some, and no doubt in some cases does good, especially in patients who are of excitable temperament and who have neurasthenic symptoms. The rest in bed reduces the frequency of the pulse, relieves the irritability of the heart, and often gives the patient the quiet and composure which he so much wants. In others, however, as shown by some cases treated in the hospital, it had not these effects, and was apt to produce insomnia. Excessive physical exercise and long fatiguing walks are to be avoided. Ascending steep hills has often a bad effect. Change of air and of the surroundings often acts beneficially. Some advocate high altitudes, others a long sojourn at a bracing seaside resort. Speaking from my own experience, I must say that a bracing

mountain climate is preferable to the seaside. The latter appears to suit more the cases in young chlorotic females.

The patient should be well fed. Small quantities of food, given often, are to be recommended. Forced feeding is not well borne. Important adjuncts to the food are those substances which have a tendency to increase the body-weight. Cod-liver oil has been specially recommended. Revilliod gives large quantities of cod-liver oil, both by the mouth and by the rectum. I have found very marked benefit, with amelioration of all the symptoms and increase of the body-weight, follow the administration of pancreatic emulsion; and several medical men to whom I have spoken of it have tried it, and speak of its good effects. Mineral baths, such as those of Nauheim, have been warmly recommended, and it appears that the patients bear them well. Chlorotic females derive benefit from the use of the chalybeate waters at Pyrmont, Schwalbach, &c. Mild hydropathy is often useful. Some, like Bryson, warmly recommend mechanical therapeutics.

Medicinal Treatment.—Of the numerous drugs recommended, few have kept their place. Digitalis, which had been much praised by some, is only indicated where there are signs of cardiac dilatation or a failure of the heart's action. To reduce the pulse in ordinary cases of Graves's disease, very large doses of digitalis are necessary; and these are not well borne, and may even become dangerous. Strophanthus, much vaunted by Fergusson, and largely used in America, I have tried in two typical cases, without any benefit. Iron preparations are only useful when there are anæmic symptoms. In such a case at present under my care, iron and arsenic appear the only drugs from which the patient derives any benefit. Preparations of iodine, which have been recommended by some, have been much condemned by others, as they increase most of the troublesome symptoms (tachycardia, emaciation, gastric, and intestinal disturbances). Now, as we know iodine is contained in thyro-iodine, the ill effect produced by iodine and its salts is not astonishing. Ergotin and arsenic seem both, in some cases, to exert a good effect; but the drug from which Wilks, Gowers, and others have seen the best effects is undoubtedly belladonna, and this accords with my own observations. The improvement is generally slow to manifest itself; but if the treatment is continued for weeks, decided signs in the amelioration of the various troubles appear. I have found no advantage from increasing the dose, or giving very large doses. The various complications require the necessary treatment, which need not be detailed here. Bromides are very useful for the excited, restless condition; sulphonal, urethan, paraldehyde for the

sleeplessness. The diarrhœa, if it only occurs in the early morning, requires no special treatment; if it become more profuse, salol, bismuth, quinine, and sulphuric acid have given better results than opiates. The acetonæmia is one of the most troublesome complications. I have generally stopped all food by the mouth, and fed the patients by enemata. Medicinally I found that large doses of citrate of potash, given in water, had the best effect in checking the vomiting. In one case, where the pulse became very quick and thready, subcutaneous injections of about ½ pint of normal salt solution, repeated three times in the twenty-four hours, brought about an abatement of the symptoms. The effect was so palpable and quick that I shall certainly have recourse to it again in similar cases.

Electrical Treatment.—The application of electricity is highly to be recommended. Vigouroux's well-known method of applying the faradic current I have closely followed in five cases. The improvement was marked in all, but in three there was a recurrence of the symptoms some months after the treatment had been left off. On the whole, I may say that the use of a weak, galvanic current, daily applied, has given quite as satisfactory results.

Surgical Treatment.—If the view, now generally held, that Graves's disease is due to an increased functional activity of the thyroid gland, be correct, then partial extirpation of the gland or the other surgical operations, such as the ligature of three thyroid arteries, or exothyropexy (Poncet), ought to give good results. The statistics published quite recently by Starr (*Medical News*, April 18, 1896) show that out of 190 cases which had been surgically treated, 23 died immediately after the operation, 74 are reported as entirely cured, 45 as improved, and 3 as not improved. In England not many cases have been treated surgically; and considering, on the one hand, that many cases of Graves's disease improve without operation and not a few even completely recover, and, on the other hand, that the mortality of the cases operated on was 12 per cent., and that in many of the cases reported cured or much improved scarcely sufficient time had elapsed to ensure that there were no relapses surgical treatment cannot be recommended as the ordinary treatment of Graves's disease, but may be reserved to cases where the enlarged thyroid impedes in a serious way the breathing, or where in chronic cases all other medicinal treatment has failed to produce relief.

Treatment with Gland Extracts.—If our view as to the pathology is correct, feeding the patient with thyroid-gland extract or giving the raw gland ought to increase rather than to diminish the symptoms, unless the normal thyroid gland

contains a body which acts like an antitoxin to the toxin produced by the thyroid gland in Graves's disease. Up to now, the effects obtained by the use of thyroid gland (in whatever form applied) have given very varying results; some cases have become much worse, others have shown some signs of improvement, and others are said to have been cured. As regards the acute and more severe cases, I think the thyroid treatment (judging from a few cases which I treated in this way) does harm; it increases the emaciation, the frequency of the pulse, and the gastric and intestinal troubles. In the more chronic cases, where the vascular irritability is less marked, it may do good; these are cases where probably some further changes have taken place in the gland, and where increase of fibroid tissue invades the glandular parenchyma. However different the symptoms of Graves's disease are when compared with those of myxœdema, yet cases are recorded where Graves's disease eventually merged into myxœdema. Again, some cases in which the administration of thyroid gland produced a good effect were not typical cases of Graves's disease, but nondescript cases in which the thyroid enlargement was the chief prominent feature. Thymus gland, recommended by D. Owen, and of which Cunningham has recently recorded some good results, I have tried in three cases, without any very marked benefit. Sounder, theoretically at least, is the treatment tried by Ballet and Enriquez, who use the blood-serum of dogs in whom the thyroid gland had been extirpated. How far the treatment is likely to succeed remains to be seen.—*The Practitioner*, *p.* 150, 1896.

28.—THE TREATMENT OF TREMOR.

In an article on this subject, published in the *Journal des praticiens* for August 29, M. Liegeois recommends the following methods:—In the trembling of sclerosis the motor-excitant medicaments tend rather to exaggerate the trouble; but its oscillations diminish perceptibly under the influence of solanine, which is preferable to potassium bromide, to belladonna, and even to acetanilide, according to Lepine, and to salol, which Dubief employed in amounts of from 45 to 90 grains a day. The dose of solanine is from 1·5 to 4·5 grains a day. Cold douches and galvanic baths also diminish the trembling, and, according to Bernheim, suggestion does the same.

In hysterical trembling cold douches, cold baths, spraying with ether or with methyl chloride on the spine, electro-static baths associated, if desired, with feeble mechanical excitation are, together with complete and systematic isolation, more useful

than all the anti-spasmodic medicaments. Bromides especially must be avoided. Metallotherapy, magnets, suggestion, and rotating mirrors, according to Luys, are to be reserved for the rebellious cases.

For the trembling of neurasthenia, warm douches are recommended when the subject is arthritic; if not, they may be followed by cold douches or cold baths. Spraying with ether or with ethyl chloride on the spine, where the tender spots are usually found, is indicated in these cases rather than in hysterical subjects. Electricity in the form of Paul's galvanic baths or electro-static baths of feeble intensity may be used. Tonics are useful aids to the principal treatment.

The almost constant trembling of Basedow's disease does not demand intervention when it is slight; as soon as its rapid oscillations cause violent shaking of the arms, even when at rest, when the legs assume a pedal movement, tincture of veratrum must be administered in amounts of from ten to twelve drops a day during a period of weeks, or antipyrine in amounts of from 30 to 90 grains a day. Strong electro-static baths are also followed by the most favourable results.

In regard to the trembling of paralysis agitans, the author is undecided as to whether it should be combated by motor-excitants rather than by reflex sedatives or *vice versa*. The muscular rigidity, he says, and the partial contractures which are coincident with the trembling are sufficient indications that the Parkinsonian trembling belongs to the convulsive order; consequently it is not surprising that the motor-excitants exaggerate the trouble. The following reflex sedatives will be found to be useful in these cases:—Alkaline bromides, from 75 to 180 grains a day; camphor bromide, from 22 grains; and sodium borate from 15 to 45 grains; extract of belladonna, from 0·3 of a grain to 3 grains; hyoscyamine, from 0·0062 to 0·186 of a grain; this should be preferred to the extract of hyoscyamus and to daturine, the effects of which are too slow, and to hydrobromide of hyoscyamine or to sulphate of duboisine, which are dangerous to handle; veratrine in very minute doses, and better still, the tincture of veratrum viride; hot baths at a temperature of 122° F.; cold affusions on the head and applications of ice to the region of the fissure of Rolando; and Paul's galvanic baths or electro-static baths. The author thinks that subcutaneous injections of a 4 per cent. solution of sodium phosphate diminish the Parkinsonian trembling, and that they are more efficacious than arsenic. When the disease has evidently followed exposure to cold and wet, sodium salicylate or salol is recommended. The trembling which is cured by mercurial treatment and potassium iodide does not depend, the author thinks, upon paralysis agitans, but

should be ranked in the category of syphilitic trembling, which is coincident in some neuropathic subjects with the appearance of secondary symptoms. If cauterisation of the nape of the neck and in the sacral region, if hypodermic injections of ergotinine have acted sometimes as reflex sedatives, it is by producing anæmia, directly or indirectly, of the spinal marrow that they have restrained the excessive activity of the anterior cornua. After the ingestion of a large dose of opium or of morphine for insomnia, the trembling increases, but with the use of codeine the results are different.

The inability of the hands to hold anything, the paresis of the legs, with a dragging gait, the arrest of the tendinous reflexes, and the trembling which are seen in alcoholics, should be classed, the author thinks, with the trembling of paralysis. In such cases strychnine alone is not so efficacious as when it is associated with picrotoxin and with veratrine. Ten galvanic or electric baths give successful results in tremor potatorum. For this acute stage of chronic alcoholism, which is called delirium tremens, alcohol in doses of from two to three ounces is an excellent remedy, which, says M. Liegeois, has never failed to give him good results. It induces sleep immediately and the patient awakens cured; whereas opium, chloral, methylal, and strychnine have failed to induce sleep under three or four hours.

Three kinds of trembling of metallic origin, from mercurial, lead, and copper poisoning, are amenable to the same treatment, that of potassium bromide in amounts of from 30 to 150 grains a day during a period of a month. It forms with the metallic substances a soluble bromide of double strength which is easily eliminated by the urine. The trembling of those who work with rubber and arsenic is tenacious, and there are no eliminating agents for these poisons except friction and baths.

The trembling of inveterate smokers and of those who abuse the use of coffee, rarely of tea, ceases shortly after the suppression of these poisons.

The trembling due to the use of opium or morphine, to hasheesh, or to cocaine supervenes as soon as the subject is deprived of the poison, and it is difficult to overcome.—*Taken from an abstract in The New York Medical Journal, September* 19, 1896.

29.—THE EXERCISE TREATMENT OF LOCOMOTOR ATAXIA.

By Dr. Dana.

The treatment of locomotor ataxia by means of systematic exercises for training the ataxic limbs, often produces some very satisfactory results. The method was elaborated first by

Dr. Frankel (*Mun. Med. Woch.*, 1890, No. 52) and still farther, by Dr. Hirschberg (*Bull. Gen. de Ther.*, 1893, p. 75). For the convenience of students and readers a schedule of the exercises, which I prescribe, and which are based, more or less, upon those of the authors mentioned, is appended here. The exercises are usually to be taken twice a day; and each exercise is to be done with the utmost care and precision by the patient.

Exercises for the Hands and Arms.—(1) Sit in front of a table, place the hand upon it, then elevate each finger as far as possible. Then, raising the hand slightly, extend and then flex each finger and thumb as far as possible. Do this first with the right hand and then with the left. Repeat once. (2) With the hand extended on the table, abduct the thumb, and then each finger separately, as far as possible. Repeat three times. (3) Touch with the end of the thumb each finger tip separately and exactly. Then touch the middle of each phalanx of each of the four fingers with the tip of the thumb. Repeat three times. (4) Place the hand in the position of piano playing and elevate the thumb and fingers in succession, bringing them down again, as in striking the notes of the piano. Do this twenty times with the right hand, and same with the left. (5) Sit at table with a large sheet of paper and pencil; make four dots in the four corners of the paper and one in the centre. Draw lines from corner dots to centre dot with right hand; same with left. (6) Draw another set of lines parallel to the first, with the right hand; same with left. (7) Throw ten pennies upon the paper, pick them up and place them in a single pile with the right hand; then with the left. Repeat twice. (8) Spread the pennies about on the table, touch each one slowly and exactly with forefinger of the right hand; then with forefinger of left. (9) Place ordinary solitaire board on the table, with the marbles in the grooves around the holes. Put the marbles in their places with right hand; same with left hand. Patient may, with advantage, practice the game for the purpose of steadying his hands. (10) Take ordinary fox-and-geese board with holes and pegs and, beginning at one corner, place the pegs in the holes, one after the other, using first the right hand, then the left. These exercises should be gone through with twice a day, and should be done slowly and carefully, with a conscious effort every time of trying to do one's best.

Exercises for the Body and Lower Limbs.—(1) Sit in a chair, rise slowly to erect position, without help from cane or arms of chair. Sit down slowly in the same way. Repeat once. (2) Stand with cane, feet together, advance left foot and return it. Same with right. Repeat three times. (3) Walk ten steps with cane, slowly. Walk backwards five steps with

cane, slowly. (4) Stand without cane, feet a little spread, hands on hips. In this position flex the knees, and stoop slowly down as far as possible; rise slowly. Repeat twice. (5) Stand erect, carry left foot behind, and bring it back to its place; the same with the right. Repeat three times. (6) Walk twenty steps, as in exercise No. 3, then walk backwards five steps. (7) Repeat exercise No. 2, without cane. (8) Stand without cane, heels together, hands on hips. Stand in this way until you can count twenty. Increase the duration each day by five, until you can stand in this way while one hundred is being counted. (9) Stand without cane, feet spread apart; raise the arms up from the sides until they meet above the head. Repeat this three times. With the arms raised above the head, carry them forward and downward, bending with the body until the tips of the fingers come as near the floor as they can be safely carried. (10) Stand without cane, feet spread apart, hands on hips; flex the trunk forward, then to the left, then backwards, then to the right, making a circle with the head. Repeat this three times. (11) Do exercise No. 9 with heels together. (12) Do exercise No. 10 with heels together. (13) Walk along a fixed line, such as a seam on carpet, with the cane, placing the feet carefully on the line each time. Walk a distance of, at least, fifteen feet. Repeat this twice. (14) Do the same without cane. (15) Stand erect with cane; describe a circle on the floor with the toe of right foot. Same with toe of left. Repeat twice. Between the fifth and sixth exercises the patient should rest for a few moments.—*The Post-Graduate, July*, 1896, *p.* 275.

30.—PERIPHERAL NEURITIS FROM TOBACCO.

By Judson S. Bury, M.D.Lond., F.R.C.P.,
Senior Assistant Physician to the Manchester Royal Infirmary.

It is now a well-established fact that impaired vision often results from tobacco smoking. The defect occupies the centre of the field of vision, extending from the fixing point to the blind spot, and is most marked for colours, especially for red and green. The scotomata are more or less symmetrical and, as a rule, unaccompanied by any peripheral limitation of the fields. The defective area corresponds to that portion of the retina which is supplied by the papillomacular bundle of the optic nerve fibres. At an early stage of the affection the discs are often slightly swollen and hazy, while at a later period in bad cases they show a slight or moderate degree of atrophy. Most observers believe that the condition depends on an interstitial

inflammation of the axial portion of the optic nerve, the mischief starting in the disc or immediately behind it. If this be the case—namely, that tobacco leads to neuritis of the peripheral parts of the optic nerves—the question naturally arises, Does tobacco ever attack other nerves? Because, judging from the effect of many poisons on the nervous system, we might naturally expect that, in some cases at any rate, the effect of tobacco would not be limited to one nerve—the optic nerve—but would show itself by disturbance of the functions of other nerves, such as the peripheral spinal nerve. It is, therefore, somewhat remarkable to find that such a possibility is not even mentioned by writers on the subject of tobacco poisoning or on that of tobacco amblyopia. Curiously enough the converse problem has been discussed with regard to alcohol. Thus while the production of multiple peripheral neuritis from alcohol is a well-ascertained fact in pathology the question of amblyopia from alcohol, although not yet completely settled, has been carefully investigated and discussed.

That different poisons (which presumably circulate freely in the blood) present considerable differences as regards the nerves attacked, is well known; thus lead shows a preference for certain branches of the musculo-spiral nerve and the poison of diphtheria for the nerves of the palate, whilst that of syphilis affects mainly the cranial nerves and only quite exceptionally attacks the peripheral parts of the spinal nerves. Hence it is not very astonishing that another poison—namely, tobacco—also shows a selective action, picking out the optic in preference to any other nerves. But other poisons, while exhibiting individual preferences for certain nerves, frequently attack many nerves. Is this the case, even if only very rarely, with regard to tobacco? For several years I have been looking out for cases of peripheral neuritis from tobacco poisoning, and I believe that they do occur although undoubtedly with great rarity. The following case is the most satisfactory example that has come under observation.

A man aged 37 years consulted me in January, 1893. He stated that for two months he had suffered from numbness and tingling in the fingers and toes, that they were always very cold and dead, and that he could not use his hands properly. His sight also had been failing for several years. On examination the grasp was weak, that of the left hand especially so. All the movements of the left fingers were feebly performed and he was unable to oppose the point of the left thumb to the tip of the little finger without flexing the terminal phalanges. The interossei and the thenar and hypothenar eminences were slightly wasted. The movements at the wrists and of other parts of the upper limbs and of the lower limbs were not

affected. The cutaneous sensibility of the hands was modified; thus he could not distinguish between the head and the point of a pin in many places. The knee-jerks were absent. On examining the eyes the following results were obtained: right vision $\frac{6}{18}$, not improved by glasses, J. 1; and left vision $\frac{6}{18}$, not improved by glasses, J. 2. There was a large scotoma for green in the centre of both fields, and a small one for red in the centre of the left field. Both optic discs were very pale and appeared atrophic. The man had always been a very heavy smoker, his average quantity of tobacco being one ounce of twist daily, and two years previously Dr. Little told him that his dimness of sight was due to tobacco. Neither his appearance nor his history gave any evidence of a tendency to alcoholic excess. He had not had syphilis, rheumatism, or diphtheria, and no account could be obtained of exposure to the action of any other poison than tobacco. He was ordered to give up smoking entirely, and a month later all his symptoms were less pronounced, his sight had improved, and the strength and the sensation of his hands were much better. A few weeks later he appeared to be quite well, but his knee-jerks were still absent.

In two other cases of tobacco amblyopia in which alcohol and other poisons could be excluded I found slight symptoms of peripheral neuritis, such as weakness of the special movements of the fingers together with numbness and tingling and slight anæsthesia.

I do not consider that the case related absolutely proves the dependence of peripheral neuritis on tobacco poisoning, but it raises the question as to such a connection, which I trust may be investigated by ophthalmic surgeons and others who see a large number of cases of tobacco amblyopia, a condition which but rarely comes before the notice of the general physician.—*The Lancet, July* 4, 1896, *p.* 23.

31.—SPINAL PUNCTURE.

[The following is taken from *Pediatrics*, July 1, 1896:]

Dr. A. Caillé, of New York City, read a paper on the "Local Treatment of Tubercular Meningitis by Tapping the Vertebral Canal." The author reported 21 cases. Of the 21 cases, 2 were injected with fluid after about 20 c.c. of spinal fluid were drawn off, namely, cases 8 and 16, both cases of tubercular meningitis. In the first case a solution of salicylate of soda was injected, in the second a solution of iodoform in water. In neither was very much benefit obtained. In most of the cases the pressure of the

fluid was such as to force out the piston of the syringe. In only 2 cases did a rise of temperature follow the puncture. No difficulty was encountered in puncturing, and no anæsthetic was employed. In no case did the fluid aspirated contain blood, and no unpleasant after effects of any kind were noted. Of the 6 cases of tubercular meningitis, tubercle bacilli were found in 4 of them, and not found in 2 of them. A careful study of the reports on lumbar puncture which have appeared up to date will certainly convince the most sceptical that Quincke's puncture is a method of diagnosis which is simple, safe, and usually easy of performance. The author presented a tabulated list of cases showing the condition of the cerebro-spinal fluid in various affections. In the majority of cases the fluid withdrawn was examined for sugar, albumin, and bacteria. The clinical diagnosis established thereby was verified by autopsy in every case where autopsy was obtainable, thus establishing the procedure of greatest value in arriving at positive diagnosis.

Dr. Arthur H. Wentworth, of Boston, read a valuable paper, showing much original research, entitled "Some Experimental Work on Lumbar Puncture of the Subarachnoid Space." He summarised the results of his experiments as follows:—(*a*) Normal cerebro-spinal fluid contains neither cells nor fibrine, and is perfectly clear. (*b*) In cases of meningitis, the cerebro-spinal fluid is invariably cloudy when withdrawn. The degree of cloudiness is to some extent proportionate to the amount and character of the exudation in the meninges. (*c*) The cloudiness is caused by cells. The character of the cells differs with the variety of the meningitis. After withdrawal, more or less fibrine is formed in the fluid. The presence of the cells and fibrine is pathognomic of inflammation in the meninges. (*d*) The cloudiness is oftentimes so slight that close observation is necessary to detect it. (*e*) The operation is not difficult to perform on infants and children. It is not dangerous if strict cleanliness is observed. (*f*) The differential diagnosis between the various kinds of meningitis can be made by microscopical examination of the sediment, by cultures taken from the fluid, and by inoculation of guinea-pigs. (*g*) Inoculation experiments afford the surest means of determining tubercular meningitis. It is of value to distinguish between the varieties of meningitis in order to determine if tubercular meningitis recovers. (*h*) In the normal fluid a faint trace of albumin is present, about one-fiftieth of one per cent. or less by quantitative analysis. In meningitis the amount of albumin is increased, and has varied from one-thirtieth to one-tenth of one per cent. (*i*) In one case a diagnosis of general infection with the staphylococcus pyogenes aureus was made from cultures taken from the cerebro-spinal fluid.

The experiments were begun five months ago, and were undertaken with the object of determining whether this new procedure was dangerous, and incidentally the other features of the report presented themselves during the course of the experiment. In all, many punctures were made, and in not a single case where there was inflammatory trouble in the meninges was the fluid perfectly clear; and this fluid invariably contained cells and fibrine. The early cases were done, of course, on normal infants, and the results proved that the procedure was perfectly harmless.

The author made a careful report of 29 cases of all kinds, and laid especial stress on the value of the different kinds of cells found in the fluid. In cases of tubercular meningitis the predominant cell was the lymphoid cell, the small, mononuclear, round cell. In purulent meningitis the polynuclear leucocyte was predominant.

In the discussion Dr. Fruitnight spoke of certain cases of sudden death after lumbar puncture, as recently reported, and said that perhaps the operation was not so devoid of danger as some might think. Dr. Wentworth replied that the 4 cases of sudden death after lumbar puncture, referred to by Dr. Fruitnight, were cases in which this procedure was not indicated, 2 being cases of cerebral tumour and 2 of uræmia, and therefore he did not consider that they were proper class of cases to compare with the others in determining the value of this operation.

Dr. Holt thought from his experience in 2 cases, that it would not be of great value for the purpose of making a differential diagnosis between the different forms of meningitis.

Dr. Caillé, in closing the discussion, said that there was no doubt in his mind of the diagnostic value of this procedure. In making the puncture he only used a glass syringe as a handle, as it was very inconvenient to insert a needle without having a good firm handle attached to it.

DISEASES OF THE ORGANS OF CIRCULATION.

32.—SOME CASES OF VENESECTION.

By T. Kilner Clarke, M.A., M.D., F.R.C.S., Surgeon to the Huddersfield Infirmary.

[The following is taken from Dr. Kilner Clarke's paper read before the Yorkshire branch of the British Medical Association:]

It is a curious thing that a remedy which for centuries gave such startling evidences of its efficacy that it came to be looked

upon as a cure for every disease, should now be so completely forgotten, and I venture to hope that the cases I am bringing before you will encourage you to give it a trial whenever you find death seems probable from the inability of the right ventricle to drive onwards the gradually accumulating mass of blood. This, the mechanical theory of the advantage of blood-letting, is so self-evident that one is more and more surprised that our immediate predecessors, who were familiar with the practice of venesection, should ever in a case of embarrassed right ventricle have omitted to use it. Its value in such a condition has been from time to time brought vividly before me, for I have repeatedly seen what I may call a spontaneous hemorrhage—perhaps from the nose, perhaps from the bowels—come on in the course of a double pneumonia, and the condition of the patient change at once from one of the greatest danger to a condition of safety.

There are other conditions, *e.g.*, commencement of pneumonia, pleurisy, peritonitis, in full-blooded, sthenic people, in which one has reason to suppose that a timely venesection would mitigate the severity of the disease.

My first 2 cases illustrate the value of bleeding in severe cases of pulmonary distress:—

Case 1.—A stout lady, aged about 63 or 64 years, on coming out of a hot chapel one very cold evening, was seized with difficulty in breathing which rapidly increased in severity, and which gave her a very strong impression that her end was near; she certainly looked it. She was sitting in a chair—she could not lie down—her face was leaden colour and swollen, her lips cyanotic, her eyes suffused and staring. The lungs were full from top to bottom of moist liquid râles, and there was no pulse to be felt at the wrist. I tried for an hour or more with the aid of stimulants, alcohol, ammonia, large poultices, hot foot baths, and whatever I could think of to give relief, but no relief came. Then I determined to remove some blood. I could not find a vein at the elbow she was so stout, so I opened one at the wrist, and, with a little patience, got the thick blood to flow; as it flowed her breathing became more easy and her face less death-like, and by the time I had drawn what I considered sufficient, it was evident that all danger was over.

Case 2.—The case of Mrs. B., a midwife, whom I saw in consultation with Dr. F. MacKenzie, in May, 1891, was of a more chronic nature. She was a woman over 60 years of age (suffering from asthma), who for over a week at the date of my visit had been unable to lie in bed. On examining her, I found very little air entering the lungs, a few moist râles here and there, and the area of cardiac dulness was much increased laterally. The pulse was poor and small. I advised venesection,

and removed nineteen ounces of blood from the right median basilic vein, by the side of a scar of a previous venesection, performed for "too much blood" when she was a girl of 18. She became faint when 18 ounces had flowed. She could lie down in bed immediately after bleeding. She got well.

The following case illustrates its value in certain apoplectic conditions :—

Case 3 is that of Mr. W. H. D., of Lindley, whom I saw in consultation with Dr. Orr in the early morning of October 19, 1893, a thin, weakly-looking man, aged 51 years, who had been drinking freely for the past week or two, and had had an apoplectic stroke three hours before my seeing him. He was unconscious, and his face was dusky ; the breathing was heavy and noisy, and he had constant convulsive twitching movements of the right arm and right leg. The heart's action was strong, rapid, and irregular. I advised venesection, and removed twelve ounces from the left arm, when perspiration broke out on the face and his pupils relaxed. In the evening of that day he had regained consciousness, but there was complete paralysis of the right side, and his speech was inarticulate. The patient completely recovered, and remained well up to a month or two ago.

The class of case in which I have most frequently performed venesection have been those of puerperal eclampsia. I do not remember to have lost a case since I first began this treatment.

Case 4 is that of a patient of Dr. Demetriadi's, to whom I was called on May 30, 1892. She was a large, fat woman, aged 37 years, eight months pregnant in her third pregnancy ; she had albumen in her urine, and her legs had been œdematous for some weeks ; she had had four convulsions before I saw her. I removed twenty-four ounces of blood from her arm, and recommended a second venesection in a couple of hours if no improvement. The following day she was conscious, but blind ; in the evening labour was accomplished by means of the long forceps, and the patient made a favourable recovery.

Case 5, that of Mrs. B., of Outlane, whom I saw with Dr. Orr, November 24, 1892. A florid, stout young woman, aged 25 years, eight months pregnant. Her first confinement, in January of the same year, was followed by convulsions and treated with chloral, and the baby died a week after. She had been awakened that morning with neuralgia of the face ; she got a drink of cold water and immediately had a convulsion. The fits had recurred every half-hour, some lasting a few minutes, some an hour and a half, and they had continued more or less all day till I saw her. She was pretty well under the influence of chloral, but it had not had any influence in checking the convulsions. I removed thirty ounces of blood from the

left median basilic vein ; she then fell asleep, and slept eight or nine hours, had no more convulsions, and was delivered about twelve hours afterwards of a healthy child, which is still living, and she made an uninterrupted recovery.

Case 6 is that of Mrs. S., of Lockwood, whom I saw with Dr. Fred. MacKenzie on October 12, 1895. The patient, who was said to be an anæmic women, was a primipara, 23 years of age. She was four and a half months pregnant, and convulsions had been going on all day—it was then 11 p.m.; she was comatose and breathing noisily, lips were cyanosed, the pupils were moderately dilated, the pulse was quick, small, and poor. The heart sounds were normal, the right ventricle was somewhat enlarged. The fits recurred every twenty minutes in spite of aperients, pilocarpine, chloroform, and hypodermics of chloral, which Dr. MacKenzie had tried during the day. I advised venesection, and some seventeen ounces were drawn from the back of the left wrist. For some twelve hours she remained in much the same condition, then things began to improve, a miscarriage occurred, and the patient soon got quite well.

Case 7 occurred within nine days of my seeing the last patient. I was hurriedly summoned from a house where I was calling, into a neighbouring cottage, to a woman in convulsions. I was told that she was at her full time of pregnancy. She was lying on the sofa dressed ; her face had the bluish, bloated, unconscious look peculiar, I think, to puerperal eclampsia. While chatting she had suddenly complained that she could not see, and had then gone off into a convulsion. I gave her a quarter of a grain of morphia hypodermically as she lay, and got her carried into her own house a few doors away, and put to bed ; then I took three-quarters of a pint of blood from the median basilic vein, and before I had finished binding up her arm she had completely regained her consciousness and her healthy aspect. I left her in the hands of her own medical man, Dr. Robertson, of Moldgreen, who told me that he induced labour and she did well.—*Sheffield Medical Journal, July*, 1896.

33.—ACUTE DILATATION OF THE HEART FROM OVER-BICYCLING.

By William C. Krauss, M.D.,
Professor of Nervous Diseases, Medical Department,
Niagara University, Buffalo, N.Y.

[The following is taken from Dr. Krauss's paper:]

After consent is obtained from the family physician to ride, a properly-geared wheel should be selected, with an easy and

comfortably-fitting saddle, the handle bar raised so as to give the body an erect and graceful position, and this advice constantly borne in mind, that the sport should be discontinued at the first sign of fatigue. As the days go by this fatigue will grow less and less, and the rider able to take longer spins as the muscles become firmer and more accustomed to this form of exercise. The whole system undergoes a certain kind of training or physical education, the heart and respiratory muscles accustoming themselves to the necessary strain just as do the extensors of the thighs and the calf muscles. Just as over-indulgence results in tiredness and lameness of the leg muscles, so also are the heart and respiratory muscles affected. The heart, through increased work put upon it by long, rapid spins, is taxed to its utmost, and when persevered in, serious damage to the heart walls or heart valves may result. As Osler truthfully says:—"Endurance in prolonged contests is measured by the capabilities of the heart, and its essence consists in being able to meet the continuous tendency to overstep the limits of dilatation."

One form of heart trouble especially is attended upon over-exertion and over-fatigue, namely, the acute dilatation of the heart walls, due to over-distension of the muscle fibres. The symptoms arising from this condition are subjective and objective and are well illustrated in a case which recently came under my observation.

James H.C., age 37 years; height 5 feet 6 inches; weight 138 pounds; married and has eight children. He had an attack of rheumatism when 12 years of age, and typhoid fever when 29. Has always been a hard-working man, employed on the railroad sometimes ten to fourteen hours daily. About May 1, 1896, he purchased a wheel and rode occasionally from his home to the railroad yards, perhaps a distance of half a mile. On May 8, 1896, he accompanied a few friends on a spin into the country and rode four miles in twenty-five minutes. On dismounting he noticed a severe pain over the left side of the chest extending to the neck, also that he was completely "winded," and the left side of the chest was throbbing violently. After only a few minutes' rest, urged by his friends, he remounted the wheel and rode home, covering the distance in thirty minutes. On reaching home he could scarcely breathe, was in profuse perspiration, trembled all over and was obliged to go to bed. Vomited during the night; the following morning he found he was still in the same condition and was unable to go to work, and was scarcely able to be on his feet. The least exertion caused his left side to "thump" vigorously, while the vessels in the neck throbbed so wildly as to make them perceptible. Patient also noticed a feeling of weakness all over the body and a stiffness of the knee joints, accompanied always with great dyspnœa.

Status Præsens.—Face has an anxious, apprehensive expression; eyes are glassy and facial muscles quivering. Pallor and emaciation are pronounced. There is a slight tremor to the head; is not painful on percussion and has never had headache.

The chest offers the most important symptoms, both objective and subjective. The precordial area is largely increased and reverberates with every heart beat. The apex point is diffused and impossible to locate. On palpation a tremulous and purring sensation is experienced which is communicated to nearly the whole side of the thorax. Percussion

shows increased area of cardiac dulness extending to the right of the sternum, to the left of the mammillary line and below the nipple. Auscultation does not reveal any valvular murmurs, although the sounds are indistinct and diffused. The heart beats number 130 to 150 per minute.

Urine is increased in quantity, but does not contain albumin or sugar. Bowels are regular. Sleep is fair but is often awakened by the heart's action. During the day he is aware of much fluttering of the heart while napping.

On July 27, 1896, I again had occasion to see the patient and found his heart in practically the same condition, beating 130 times per minute, and as tumultuously as on the former examination. The history of this case leaves little doubt as to the correctness of the diagnosis—acute dilatation, and the cause of such dilatation—over-bicycling. The distance covered and the time would be insignificant to a trained wheelman, but to one not accustomed to long rides it was quite an undertaking and was fraught with serious consequences. In conversation with beginners in the sport one hears so often, "I rode eight or ten miles to-day in such a time," or "I rode a mile in such a time and have only been on the wheel a few days," and yet these riders may never have taken any kind of regular physical exercise. They certainly are imprudent and should be discouraged in their ambitious tendencies until they are in condition to endure the necessary strain. To the writer this seems one of the greatest dangers of bicycling and yet one of the easiest to avoid.—*Journal of the American Medical Association, October* 10, 1896.

34.—THE MARRIAGE OF CARDIAC SUBJECTS.

[The following is a leaderette in the *Medical Press and Circular*:]

In the vast majority of instances young women who are affected with heart disease marry, if they get the chance, without consulting the family doctor in reference to their physical suitability for the married state. Nevertheless, the influence of marriage and pregnancy on such patients is a matter of considerable interest to the practitioner, whose advice is occasionally sought by anxious parents or the circumspect and not wholly blinded lover. Daily experience proves that even comparatively advanced heart disease is compatible with repeated pregnancy and normal labour, and the ease with which these patients, or some of them, withstand the drain of pregnancy and the strain of labour is often a matter for surprise. This fact, however, hardly justifies the assumption that pregnancy is not liable to cause serious circulatory disturbance by reason of the extra work thrown upon the heart. The likelihood of cardio-pulmonary complications is determined by what we may

term the "margin of compensation." Repeated pregnancies unquestionably have a disastrous effect on a previously-diseased heart, culminating, sooner or later, in asystole. This is most frequently the case in patients presenting pronounced lesions of the mitral valves, the extra strain thrown on the pulmonary circulation early giving rise to dyspnœa and hæmoptysis. Whenever these symptoms have already been observed marriage, or pregnancy, at any rate, should be disadvised. It is obvious that, if the "margin of compensation" falls short of the force required to carry on the circulation under ordinary circumstances, the defect is likely to be enhanced by additional demands on the circulatory apparatus. If, on inquiry, the conditions appear to be favourable, marriage may be assented to on condition that the state of the heart be carefully watched, and that the patient promises to observe the rules laid down for her guidance. One of the most important rules in this respect is the strict avoidance of fatigue and exposure when pregnancy takes place. Dr. Jaccond lays great stress on the importance of a mixed milk diet, rigorously applied from the second or third month of pregnancy. In virtue of its diuretic action it constitutes a powerful aid to the circulation, and thus averts the numerous and dangerous complications which circulatory failure and venous stasis entail under the special conditions. The patient should always be frankly informed of the extra risks which marriage involves to those suffering from organic disease of the heart, for it can hardly be doubted that the effect of repeated pregnancy in such subjects is to accelerate cardiac degeneration and hasten the advent of asystole. This is about all the medical man can do, for the proportion of cardiacs among marriageable females is too large for it to be practicable, or even desirable, to exclude them from their natural career as wives and mothers.

35.—IS MITRAL REGURGITATION FROM VALVULAR DISEASE COMMON OR SERIOUS?

By Theodore Fisher, M.D.Lond., Pathologist to the Bristol Royal Infirmary, &c.

[The following is taken from Dr. Fisher's interesting paper:]

It is well known that mitral regurgitation from valvular disease appears to be much more frequent at the bedside than the post-mortem room would lead one to suppose, yet there is possibly little idea in the minds of the majority of the practitioners of medicine how uncommon the examination of necropsy records proves it to be. Mitral regurgitation from

valvular disease conveys the idea of leakage due to deformity of the flaps of the mitral valve, presumably mainly of the large anterior flap, since the posterior division is so small. Mere thickening of the flaps to a slight extent cannot be a lesion of sufficient importance to account for death, since there is no reason why thickening without deformity should lead to regurgitation.

Examination of a large number of post-mortem records shows that death from uncomplicated mitral regurgitation may be described as rare. Thus, excluding cases in which other lesions were present such as general adhesion of the pericardium in children, and disease of the aortic valves, in twenty years of the Bristol Royal Infirmary post-mortem records there were only eleven cases of deformity of the mitral valve leading to regurgitation without any associated stenosis of the orifice, and ten years of the Guy's Hospital records gave only five cases, a fact briefly referred to in my paper on "Hypertrophy of the Heart without Gross Organic Lesion." But the rarity of deformity of the mitral valve leading to regurgitation through the orifice does not indicate that the flaps of the mitral valve do not suffer in consequence of rheumatic endocarditis. They undoubtedly become inflamed, yet the inflammation leads not to a puckering allowing merely regurgitation but to thickening and approximation of the flaps—in other words, to stenosis of the mitral orifice. Thus the above-mentioned collections of post-mortem records gave respectively forty-five and sixty-two cases of death from mitral stenosis during the same periods that there were eleven and five cases of mitral regurgitation due to valvular disease. It seems to me that attention to this point will probably show that mitral stenosis is the almost invariable result of inflammation of the mitral valve, and that cases, in which it may be at first thought that there is some deformity of the flaps leading to regurgitation, will, on more careful examination, prove to be examples of other forms of disease of the heart, possibly of the heart muscle. Whether, however, mitral valvular disease allowing uncomplicated regurgitation should or should not prove to have any real existence, there can be no doubt that mitral stenosis is far more common. The explanation of this fact appears to be that the inflammation produced by rheumatism affects mainly the fibrous structures of the valve. These fibrous structures pass from the ring at the base of the flaps to the attachment of the chordæ tendineæ, and from these attachments they are continued as the chordæ tendineæ themselves to the apices of the musculi papillares. When the fibrous structures become inflamed there is first new formation and afterwards contraction of the new tissue. The contraction exerts tension from the

apices of the musculi papillares to the fibrous ring around the mitral orifice; the edges of the flaps are drawn together and later become adherent; the chordæ tendineæ also may not only be shortened and thickened, but may become fused together as the contraction brings them into contact.

Mitral stenosis the above statistics have shown to be the common sequence of rheumatic endocarditis, affecting the mitral valve, and this lesion is a serious one, since the majority of cases end fatally before the age of 35. It follows, therefore, that after an attack of rheumatism we shall look for clinical signs of obstruction of the mitral orifice as evidence of permanent disease of the valve that will in all probability sooner or later end fatally. If we are able after some length of time to exclude mitral stenosis, but a systolic murmur persists, it probably does not follow that a valvular lesion causing a regurgitation exists. It is reasonable to suppose that some dilatation of the left ventricle occurring during an attack of rheumatism may become permanent. Yet the patient may suffer little or no inconvenience. We are all accustomed to the unexpected discovery of a systolic apex murmur in patients who present not even the slightest degree of cardiac failure. Sir Andrew Clark, it may be mentioned, noticed during thirteen years no less than 684 instances of cardiac murmurs in private patients who presented no symptoms of heart disease. When there is a history of rheumatism in such cases it is customary to say that there is a lesion of the mitral valve, but that efficient compensation has taken place. I consider that such a conclusion rests upon insufficient evidence.—*The Lancet, July* 18, 1896.

36.—SERIOUS HEART LESIONS WITHOUT WELL-MARKED CONTINUOUS PHYSICAL SIGNS.

By Henry L. Elsner, M.D., of Syracuse, N.Y.

The clinician who depends entirely upon continuous physical signs for the recognition of all cardiac lesions will be likely to overlook numerous cases in which a thorough appreciation and interpretation of subjective symptoms, with occasional and transitory objective manifestations, would lead to a correct conclusion.

[The author then records an illustrative case in detail, and the following is taken from his commentary on the subject:]

In the first class of cases to which I wish to call attention, for days at a time there exist with dilatation marked arhythmia, tachycardia, and alarming intermission of the pulse, with delirium cordis, dyspnœa, and all of the other evidences of an organ ready to surrender with secondary involvement of lung and kidney. After persistent effort there has for a time, at least, been a return to apparent health, the heart acting normally, but little dilatation remaining. Some of these cases I have followed for many years and have battled vigorously against repeated attacks.

In the second class of cases we have, for a limited period, symptoms of failing heart-strength, as shown by increasing dyspnœa on exertion. There are no cardiac murmurs in most of these cases, but persistent dilatation, with little or no hypertrophy. The pulse remains regular almost to the end, though there is marked tachycardia. The heart shows no tendency to mend. Sudden death follows, as a rule, after the acute symptoms have persisted for a few days or weeks. As the symptoms grow more alarming, we have all the evidences of portal and renal stasis. In these cases there is no pre-existing emphysema. In both varieties there was found marked myocardial change on macroscopic, and more particularly on microscopic examination.

The most recent investigations, bearing upon the anatomical causes of changed and faulty compensation in valvular lesions, prove the direct association of these insufficiencies with changes in the heart-muscle consequent upon lesions in the coronary vessels. In those cases in which the valvular diseases of the aorta are due to fibrosis—and the majority of these are—it has been found that the branches of the coronaries, as well as the aorta itself, are the seat of periarteritis and endarteritis. In consequence of these changes, we find circumscribed degeneration of the muscular structure of the heart, even necrosis and ultimate foci of new cicatricial tissue.

With mitral lesions, which are more likely to be of inflammatory origin, the starting point of the retrograde process is in the coronary veins. The right ventricle is unable to hypertrophy sufficiently, and its muscle is weak, without resistance. There is obstruction, not only in the venæ cavæ in these cases, but the coronary veins are equally involved in the process; these are dilated, with thickened walls. Increasing arhythmia, reduced heart-strength, and progressive ventricular dilatation are accompanied with more audible evidences of auriculo-ventricular incompetence and all of the ordinary symptoms of marked faulty compensation. This alarming condition can, in many cases, be postponed, though it cannot be indefinitely averted, by an appreciation of the existing

complication. With valvular lesions, the first and slightest increase of dyspnœa, associated with either persistent or transitory arhythmia, the slightest increase of physical signs after exertion, and with these symptoms an increasing area of cardiac dulness, whether permanent or transitory, must lead to the conclusion that the myocardium is becoming insufficient, undergoing, in all probability, degenerative or inflammatory change, requiring rest and active treatment.

When valvular lesions are associated with acute infectious processes, it is not at all uncommon to find clinical and pathological evidences of acute exacerbations of chronic myocarditis; indeed, in some of these cases the evidences of the acute disease of the heart-muscle overshadow entirely those of the valvular lesion.

Attention must be directed to the variability of the physical signs referable to the heart in many forms of anæmia, either due to constitutional disturbances or local asphyxia from coronary disease, and the rapid disappearance of these under favourable environment and treatment.

The history of the cases of paroxysmal tachycardia in which the tachycardia is not a symptom, but is supposed to be an essential disease is peculiar. There are sudden attacks of rapid heart-action with a small, thready, easily compressed pulse, and no previous history or physical signs of heart disease. I have seen patients in these attacks with the pulse reaching far beyond 200 per minute, at the same time found it regular, with diffuse, but feeble cardiac impulse, and ultimately, after repeated attacks, there was increase of cardiac dulness, due to dilatation, which disappeared with the disappearance of the symptoms (Bristowe).

Dilatation is not a necessary accompaniment of paroxysmal tachycardia, and when it follows is of secondary origin. These cases of paroxysmal tachycardia must not be confounded with hysterical palpitation.

Finally, it may be positively asserted that murmurs have been heard occasionally when no organic change was found after death. It can be as confidently stated that organic change was often present when no murmur was audible. Such a case I recently saw, in which there was ulcerative endocarditis. Murmurs disappear for a time, as Fothergill says, "in a perplexing manner." The aortic regurgitant, even, has been absent for distinct periods. Mitral regurgitant murmurs have vanished in cases where the dilated left ventricle has been relieved, and the curtains of the valve consequently become sufficient to close the ostium.—*Medical News, September* 5, 1896.

37.—THE TREATMENT OF AORTIC DISEASE.

By WILLIAM RUSSELL, M.D., F.R.C.P.E.,
Assistant Physician to the Royal Infirmary; Physician to Queensberry House; and
Lecturer on Pathology in the School of Medicine, Edinburgh.

[The following is taken from Dr. Russell's address on "Some of the Indications and Limitations in Cardiac Therapeutics," read before the Hull Medical Society:]

To maintain that digitalis is suitable and applicable in all cases of double aortic lesion, or of regurgitation alone, with, of course, failure of compensation, is not borne out by my experience. But it is equally contrary to my experience to hold that it is never applicable. In pure stenosis with a faltering ventricle it is always applicable, but in regurgitation we have to try to define the conditions in which we may expect it to act beneficially, and when otherwise. The first element is the pulse-rate. If it be from 60 to 70 digitalis is not suitable. The action of digitalis in average medicinal doses is to prolong diastole while strengthening systole, and the administration of the drug so as to produce this result, even in a slight degree, is attended with danger, for even a moderate prolongation of diastole may give time for an amount of blood to regurgitate into the ventricle, which leads to increased embarrassment, or even a fatal degree of over-distension. On the other hand, aortic incompetence with a pulse which can be slowed to about 70 is benefited by digitalis. There are cases in which the pulse is not thus influenced by digitalis, and in these there is often, if not always, other evidence of acute changes proceeding in the endocardium, and whenever there is an active endocarditis present digitalis is rather hurtful than beneficial in my experience. With the pulse between 60 and 70, I have notes of cases very markedly benefited by belladonna. In these the pulse-rate rose some 10 beats per minute, and this was associated with marked relief of dyspnœa and cardiac distress. In these cases I gave ℥xx of the tincture three times a day, and stopped it as soon as the pupil gave the slightest indication of being influenced. Following on the relief, arsenic, iron, or other tonics may be given, with occasional resort to belladonna either in the previous or smaller doses. Great care has to be exercised with the larger doses, for as soon as the physiological effect is indicated by the pupil the pulse tends to lose its tone and volume. The explanation of the effect is to be found partly in the fact that belladonna accelerates the cardiac action, but also, I believe, in the further fact that it relaxes arterial spasm. This point of arterial spasm is of great importance in aortic

cases. It is readily recognised in the radial artery by the firmness of its wall, and this is quite appreciable notwithstanding the collapsing character of the blood-wave. When this is present it has to be remembered that the coronary arteries must participate in the spasm, and that thereby the nutrition of the myocardium is lowered in proportion to the degree of anæmia. The anæmia is the result of the arterial spasm. The relaxation of the arterial wall which takes place under treatment can be plainly enough appreciated in the radial artery by the educated finger. In connection with this question of spasm let me say that I always regard its existence as a contra-indication to the use of digitalis, for I have never found it then other than useless or hurtful. It has been asserted that strophanthus does not act on the muscle wall of the arteries, and I have allowed it to be given in such cases as I have been discussing until the increasing tension of the radial wall and increasing dyspnœa have led me to order it to be stopped, with the result that marked relief was given to both. Before leaving the consideration of aortic lesion I may add that I have tested the effect of iodide of potassium, which sometimes leads to considerable amelioration of distress, but the explanation is to be found in the relief of vascular spasm, and not to any direct action on the heart. It requires to be closely watched, for I believe I have seen it produce a fatal result by being pushed too energetically after relief had been obtained, the relief being followed by a dangerous fall in blood pressure. It cannot be too anxiously kept in mind that the relief of spasm is all that is wanted, and if the remedy used for this purpose is continued it is certain to end in disaster. This is as true of the nitrites as of belladonna and iodide of potassium.

It may be well to state in connection with aortic incompetence that small doses of the tincture of digitalis, say from three to five minims, are not necessarily hurtful, but even these are so if they lead to slowing of the heart-rate; and I am not satisfied that doses which do not affect the rate have any better effect than the same quantity of iron, strychnine, or arsenic. The association of mitral incompetence with aortic lesion does not modify the general propositions I have ventured to express.—*British Medical Journal, July* 25, 1896.

38.—CARDIAC COMPLICATIONS IN GONORRHŒA.

[The following is taken from a commentary in the *Montreal Medical Journal*, July, 1896, p. 50, upon the contributions to this subject from His, Leyden, Councilman, Dauber and Borst, and Thayer and Blumer:]

Until recently gonorrhœa has been regarded as a local disease. With the exception of arthritis the local manifestations only have attracted attention, and visceral complications, although occasionally referred to, have not been generally recognised. The discovery of the specific micro-organism of the disease has, however, directed attention to certain secondary lesions, especially in the heart, and the demonstration of the gonococcus in distant parts has shown that a broader view of the disease must be taken than formerly.

Owing to the occurrence of arthritis the heart has been subjected to careful examination by all clinicians, and it has been very generally recognised that endocarditis very seldom occurs. Indeed, it is usually laid down as a diagnostic rule that the presence of a murmur is a point against the gonorrhœal origin of any given case of arthritis. Whilst this rule still holds in the majority of instances, numerous cases now recorded force us to recognise the fact that endocarditis may occur in gonorrhœa, either associated with arthritis or less commonly in its absence. Myocarditis and pericarditis are also complications which occur, although less frequently than endocarditis.

The demonstration of the gonococci in the myocardium (Councilman), and also in the valves in endocarditis, completes the proof of the relationship between gonorrhœa and the cardiac affections occurring in this disease.

Unfortunately almost all writers on this subject rely on the anatomical reactions of the gonococcus for its identification. Cultures have either been omitted at the autopsies or have proved negative, owing to difficulties of growing the organism on culture media. Thayer and Blumer have, however, succeeded in obtaining a pure culture of the gonococcus in a case of fatal gonorrhœal endocarditis. Streptococci and staphylococci have been found in the secondary lesions of gonorrhœa as the result of a mixed infection.

Many of the reported cases of endocarditis have resulted from a very mild attack of gonorrhœa, and have appeared after the visible purulent discharge was arrested. Both the benign and ulcerative type of endocarditis have been recognised, the latter being much the rarer of the two. From an etiological standpoint the ulcerative cases are the most important, as it is only in them that the final pathological proof can be obtained.

The symptoms do not differ from other forms of ulcerative endocarditis, and the diagnosis is based on local evidence of valvular disease, fevers, rigors, emboli in the various parts of the body, nephritis, and splenic enlargement.

Leyden's case was preceded by a gonorrhœal arthritis, and proved fatal about a fortnight after the first physical signs of cardiac disease developed. The diagnosis rested on the local

physical signs of cardiac disease, irregular fever with repeated chills, vomiting, nephritis, and the rapid and malignant course of the disease. Gonococci were found in the valves, but no cultures were obtained.

Thayer and Blumer's case is the most important and conclusive yet published. The patient, a woman of 34, had rheumatism three months before admission, but stated that the joints were not swollen, and that she was confined to bed for ten days only. When examined she was a trifle cynotic; pulse small, 132; temperature, 102·2°. The apex beat was in the nipple line; a systolic and presystolic murmur and thrill were detected at the apex. Splenic enlargement and albuminuria were present. During the illness there was fever with irregular exacerbations of temperature and rigors. The patient became much emaciated and sallow; death occurred about three weeks after admission.

At the autopsy ulcerative endocarditis of the mitral valve, with large vegetations projecting into the auricle, was found, together with splenic enlargement, acute and chronic nephritis, and infarcts of the spleen and lung. Gonococci, recognised by their microscopic and staining reactions, were found in the vagina and in the cardiac valve, but were absent from the organs. Cultures from the heart proved negative, owing to the absence of proper media, but blood drawn from the median vein during life and mixed with agar showed typical growths of gonococci. This medium, owing to the large amount of blood employed, was peculiarly favourable to the growth of the organisms. The cultures further resembled gonococci in not developing in transplantation to ordinary media, and in their microscopic and tinctorial characters.

The authors conclude that the organism found in pure culture in the blood and the micrococci on the affected valve were the gonococci of Neisser. (1) Its form and arrangement were identical; (2) while present free the cocci were frequently found crowded in the protoplasm of leucocytes in the thrombus in the mitral valve; (3) it refused to grow on the ordinary media; (4) it grew readily upon a mixture of human blood and agar-agar (one-third blood); (5) it decolorised with Gram's method.

39.—THE DIAGNOSIS AND TREATMENT OF CARDIAC FAILURE.

By Professor Sir T. GRAINGER STEWART.

[The following is taken from an abstract of Sir Grainger Stewart's paper, read before the Carlisle meeting of the British Medical Association, 1896:]

Professor Grainger Stewart said that under the term "cardiac failure" he included all conditions in which the muscular fibre of the heart becomes unfit adequately to carry on the circulation, whether due to disease proper, to the muscle itself, or to the valves or blood-vessels. After briefly referring to the consequences which follow upon this condition, he passed to the question of the various means which we can employ for its remedy.

(1) Among all the agents at our disposal the most important is rest, which, by relieving the heart of extra work, enables it to recover tone. While rest is good in all severe cases of cardiac failure, it brings out the most striking improvement in those who engage in labouring work.

(2) Second in importance is the element of hope.

(3) Next to rest ranks diet. Among hospital patients an increased allowance of nourishment, and especially of nitrogenous material, is often attended by striking benefit, while in private practice the amount of rich food may have to be curtailed, and the use of directly unsuitable articles has to be forbidden. Many cardiac patients err in taking too much liquid with or soon after meals—a habit which not only interferes with digestion and tends to the development of obesity, but also renders the circulation more difficult by keeping at a high level the volume of blood, and impairs the nutrition of the heart by increasing its load of fat. A "dry diet" is often of great service in heart cases. In regard to the use of alcohol as an article of diet, while any excess is to be strongly deprecated in all cases of threatening cardiac debility, and its use in any form which is unsuitable to the stomach to be forbidden, its employment in moderate doses is often of great service, more especially in such forms of cardiac debility as of late years were seen following influenza or in the advancing cardiac weakness so common in later life. The best form of alcohol is, in most cases, whisky, the amount of which, for habitual use, should never exceed four ounces in twenty-four hours. Tea, coffee, cocoa, and other non-alcoholic stimulants, as well as tobacco, must be discontinued if they are found to disturb the action of the heart.

(4) Exercises have to be considered in three different forms:—(*a*) *Passive Exercises.*—After describing these in detail Sir Grainger Stewart said that he had been able to satisfy himself from his experiments (1) that, in the great majority of cases of cardiac dilatation, the area of cardiac dulness diminishes perceptibly during each administration of massage; (2) that the character of the cardiac sounds and the rhythm and strength of the pulse correspondingly improve; (3) that the patients usually experience a sensation of comfort, and feel the better for the

treatment; (4) that on one or two occasions he had seen the manipulations produce the opposite effects in all these particulars, apparently because the heart was feeble and the patient fatigued at the time of application; (5) that, although the immediate favourable effects pass off in a few hours, they frequently do not pass off completely, for the line of cardiac dulness was often found within that at the previous *séance*; (6) that repeated applications of massage bring about a permanent diminution of the area of dulness, with improvement of pulse and of the patient's sensations; and (7) that he had seen a case in which the Schott movements produced a deleterious effect, rendering the heart more irregular and intermittent, which was treated on the following day by this method of passive movements with the most striking benefit. (*b*) *Movements with regulated resistance after the method of Schott.*—His experience of this method of treatment had satisfied him (1) that in a large proportion of cases it effects immediate improvement of the heart, as shown by percussion and auscultation; (2) that in many cases the rhythm of the pulse improves and the beat becomes more vigorous; (3) that, while the immediate effect is in a sense temporary, the heart rarely goes back to its previous condition of dilatation, but remains somewhat smaller than it had been before the exercises; and (4) that gradually improvement of a lasting kind sets in, so that the heart recovers its tone and the area of dulness diminishes. (*c*) *The method of Oërtel by climbing heights.*—Sir Grainger Stewart had not been able to make of this as careful experimental a trial as he had done of the passive and resisted exercises, but he had seen enough to satisfy him that in a certain proportion of cases, and at certain stages of the treatment, the method is attended by excellent results.

(5) *Baths.*—A very important part of the treatment at Nauheim consists of baths. He showed tracings illustrating the good effect of similar baths in some of his infirmary patients suffering from various cardiac lesions.

(6) Reference was next made to the use of medicinal remedies in the treatment of cardiac failure, speaking first of cardiac tonics. In his experience digitalis had proved the most valuable of the heart tonics for increasing the elasticity and contractile power of the heart muscle, steadying and strengthening the pulse, and relieving the dyspnœa and other pulmonary symptoms. He did not consider that the theoretical objection to its use on account of its power to contract the arterioles had been borne out by clinical evidence, although, to combat that tendency, especially when the heart failure was associated with cirrhotic Bright's disease or with sclerosis of minute vessels, he had often given the nitrites along with digitalis with apparently good effect,

although he admitted that experiments on animals had failed to confirm the value of such a plan of treatment. Next to digitalis he placed strophanthus as a cardiac tonic, for the knowledge of which medical science was almost entirely indebted to his colleague, Professor Fraser. Its influence in contracting the arterioles is much less marked than that of digitalis, and so far it has the advantage, and it would theoretically appear that strophanthus ought to give the better result; but, in his experience of it clinically, it had not been equal to digitalis. Unquestionably, strophanthus is of greater service in an emergency, and helps the heart more rapidly than digitalis can, and this is a point of immense importance, which must be kept in view in cases of urgently threatening cardiac failure. In some cases strophanthus may be borne when digitalis produces stomach disturbance, or the reverse may be the case. Brief reference was made to the use of caffeine and diuretin, and the importance of nux vomica and strychnia as cardiac and general nervine tonics when other remedies are not well borne.

(7) Leaving the group of cardiac tonics, he then proceeded to the consideration of the remedies which relieve the heart by dilating the arterioles. For rapid action the foremost place is taken by nitrite of amyl. For producing prolonged effect sodium nitrite and nitro-glycerine were of first importance. As regards potassium iodide it may be held as proven that in ordinary doses it neither depresses the heart nor dilates the vessels: but in some cases, particularly where there is chronic inflammatory change still going on, it appears to aid the action of cardiac tonics.

(8) He next referred to the means of dealing with the secondary results of cardiac failure, especially dropsy. He placed especial importance upon the tapping of the pleura. The amount of hydro-thorax is often unsuspected and out of all proportion to the dropsy elsewhere. Its presence greatly exaggerates dyspnœa and adds to the embarrassment of the heart, and he has often found that the removal of a small quantity, say twelve or fourteen ounces, from a pleura gives relief to breathing far beyond what one would naturally expect. He had never seen reason to condemn the use of digitalis in aortic cases, as some have done, and the only conditions in which he is inclined to urge great caution in the use of cardiac tonics is where one has reason to believe that the inflammatory process in the valves is still advancing or degenerative changes in the fibres of the heart, whether the latter be dependant upon disease of the coronary arteries or not. In the advancing inflammatory condition he prefers to avoid tonics and exercise entirely, to insist on absolute rest, and to prescribe arsenic and iodide of potassium, often with carbonate of ammonia, while in

the degenerative changes in the heart he would employ tonics and exercises with the most scrupulous watchfulness. The various nervous symptoms — sleeplessness, pain, &c. — might often be relieved by beef-tea and alcohol at bedtime and during the night. Hoffmann's anodyne is useful, but best of all is opium or morphia, which failing, sulphonal, paraldehyde, and the nitrites may be employed.

In conclusion, he said that, reviewing the whole subject, it is clear that heart failure may be most successfully treated by a judicious combination of various methods and not by the exclusive use of any one. In answer to the question as to whether patients should be recommended to resort to Nauheim, he should in many cases advise them to do so, because there they can have a favourable climate, valuable natural thermal baths, change of air and scene, and the advantage of the great experience and skill of Dr. Schott and his colleagues. But, as that gentleman himself has pointed out, essentially the same conditions may be obtained in our own country, and many a cardiac case might be sent with great advantage to Buxton, Harrogate, Bridge of Allan, or other places which involve a less fatiguing journey and afford advantages very similar to those of Nauheim.—*The Medical Press and Circular, August* 19, 1896.

40.—LECTURES ON ANGINA PECTORIS AND ALLIED STATES.

By William Osler, M.D., Professor of Medicine, Johns Hopkins University, Baltimore.

[Prof. Osler describes, in the fourth of his valuable lectures, (1) syncope anginosa, (2) the Adams-Stokes syndrome, (3) angina sine dolore, and (4) cardiac asthma. The following occur among his remarks:]

The Adams-Stokes Syndrome.—There is a most interesting group of symptoms associated with myocardial changes, and sometimes with angina. Permanent slowness of the heart action and vertigo or syncope are the two distinguishing features of this syndrome. Do not forget that slowness of heart's action is the special feature, not simply a diminished number of pulse beats at the wrist. In myocarditis, in mitral-valve disease, and as an effect of digitalis the radial pulse may appear very slow—35 to 40 per minute—while the heart beats are exactly double. In the bigeminal type of heart beat the second pulse wave very often does not reach the wrist, and may lead a novice into the serious error of supposing

that there is an extreme bradycardia. In "Adams's disease" the pulse rate may fall to 30 or 20 per minute, or, in extreme cases, even to 10 or 5. The patients are usually advanced in years, and show often an extreme grade of arterio-sclerosis, the arteries feeling, as Stokes remarked, both full and hard. The cerebral symptoms are those to which naturally chief attention has been paid. Vertigo is the most common, and is usually transient and oft repeated. Actual syncope of three or four minutes' duration, resembling closely the syncope anginosa, and doubtless of the same nature, has been the special feature in some cases; while in others the attack has been apoplectoid in its character, of longer duration, and has been complicated by convulsions. Huchard regards the slow pulse as a result of changes in the vagi centres, due to disease of the arteries of the medulla. He calls this form of arterio-sclerosis the cardio-bulbar. Transient disturbances in the cerebral circulation, so common in the subjects of advanced arterio-sclerosis, are responsible for the syncope and the apoplectoid attacks, which remind one of the temporary hemiplegias or monoplegias, the aphasias, and the transient paraplegias, to which these patients are subject. Typical cases are not common.

Angina Pectoris sine Dolore.—The three elements in an attack —the pain, the sense of anguish, and the abrupt ending of life— may be dissociated. There may be only the severe pain, there may be a sense of angor and oppression without any pain— *angina sine dolore*—or death may occur without a moment's warning. The recognition of a group of cases in which the element of pain is subsidiary was made by Professor Gairdner. His brief description is as follows:—"Apart from what has been variously termed cardiac asthma, dyspnœa, or orthopnœa, which in many cases receives its clear explanation from the associated states either of the pulmonary circulation or of the lungs, bronchi, and pleuræ, as disclosed by physical signs, there is often an element of subjective abnormal sensation present in cardiac diseases which, when it is not localised through the coincidence of pain, is a specially indefinable and indescribable sensation, almost always felt to be such by the patient himself. I make this remark deliberately, as the result of experience, and well knowing that it is liable to be brought into question in particular instances; that, in fact, a large part of what has been described under the titles given at the commencement of this paragraph has been inextricably confounded by systematic writers with the sensation, or group of sensations, to which I refer. To this group of sensations, when not distinctly accompanied by local pain, I have, in various instances, given the name of *angina sine dolore*, recognising thereby what I believe to be its true diagnostic and pathological significance,

and its alliance with the painful angina of Heberden ; the pain in which, however, as we have already seen, is an exceedingly variable element, both in degree and in kind." An attack of an *angina sine dolore* may be the very first indication of cardiac trouble. The attacks may alternate with those in which agonising pain is present, or they may entirely supplant the severer type. Some of the milder paroxysms, indicating the beginning, as it were, of the trouble, appear to be of this kind.

Cardiac Asthma.—In reading the reports of the cases published within the first half century after Heberden's paper, it is very evident that much confusion existed, and nearly all forms of cardiac distress were termed angina. The earliest and the latest, as it is the most urgent, symptom in heart disease is dyspnœa, which the older writers characterised as asthma ; and as it forms a common feature in cases of angina pectoris it is not surprising that more or less confusion prevailed. What, then, is this condition ? Go into the wards and ask the patients with valvular disease of the heart as to the very first symptom of their trouble. With scarcely an exception they will answer, "Shortness of breath." Take a long series of histories of cases of arterio-sclerosis ; you meet with the same complaint at the very outset. Clinically, we meet with various grades of intensity in this cardiac asthma. An exertion, the ascent of a pair of stairs, which may call forth only a fraction of the reserve force of a normal heart, may be too much for a right ventricle (in a case of mitral stenosis), or for a left ventricle (in a case of aortic insufficiency), and at the head of the stairs the patient pants, and is perhaps a little cyanosed. In chronic valvular disease such symptoms may recur on extra exertion for years without much significance; when the cardiac dyspnœa develops spontaneously, without extra exertion, the breakdown is not far off, and in the slow progress to the grave no other symptom is so distressing to the patient. In cases of advanced arterio-sclerosis there are often attacks of dyspnœa of great intensity recurring in paroxysms, often nocturnal. The patient goes to bed feeling quite well, and in the early morning hours wakes in an attack which, in its abruptness of onset and general features, resembles asthma. There is usually a sensation of præcordial distress, a feeling of constriction and oppression. Two other features about this form of attack will attract your attention—the evident effort in the breathing and the presence of a wheezing in the bronchial tubes and of moist râles at the bases of the lungs. The patient may spring from the bed and throw open the window in his terrible air-hunger, and he assumes an attitude most favourable to the working of all the accessory muscles of respiration. Slight cyanosis is usually present, and in severe paroxysms a cold sweat breaks out in the face and limbs. The

pulse is feeble, often irregular, and very small, and on auscultation one hears either gallop rhythm or the fœtal type of heart beat. Death may occur in the attack. This form of cardiac asthma occurs with great frequency in some of the subjects of angina pectoris. And, lastly, the type of breathing known as Cheyne-Stokes is sometimes a form of cardiac asthma, and it is not uncommon in angina pectoris. The curious pause in his respiration of which John Hunter spoke was probably a period of apnœa in a paroxysm of Cheyne-Stokes breathing. It was first described by Cheyne in a case of fatty heart, and you will find it more frequently associated with chronic myocarditis than with any other form of heart disease.—*New York Medical Journal, September* 12, 1896.

DISEASES OF THE ORGANS OF RESPIRATION.

41.—AUTOSCOPY OF THE LARYNX AND TRACHEA (KIRSTEIN'S METHOD).

By Logan Turner, M.D., F.R.C.S.Ed.

[Read before the Medico-Chirurgical Society of Edinburgh, June 3, 1896.]

The principle of this method of examination consists in bringing the interior of the larynx and trachea directly under the eye of the observer without the use of the laryngeal mirror, and consequently without dealing with any reflected image. The method is called autoscopy; the instrument employed is the autoscope.

Five conditions appear to be necessary for the satisfactory carrying out of this examination:—(1) There must be a straight line between the aperture of the mouth and the interior of the larynx and trachea. This is done by raising the patient's head until it forms an angle of about 60° with the axis of the trunk.

(2) All prominences which project into the lumen of the canal and obstruct the direct view downwards must be effaced; the base of the tongue and the epiglottis are the two structures which thus interfere with the line of vision. The base of the tongue is kept in the required position by a spatula, which must press upon the posterior part of the tongue immediately in front of the epiglottis. The epiglottis is raised and drawn forwards by this same pressure on the base of the tongue, and by drawing on the glosso-epiglottic ligament which

so closely unites the epiglottis with the tongue. In operating on the larynx by this method a spatula is introduced behind the epiglottis, and in this way it is removed from the line of vision.

(3) The larynx and trachea must be efficiently illuminated; this is most frequently done by an electric lamp placed in the handle of the autoscope, though it may be obtained instead by an electric lamp attached to a forehead band.

(4) The patient must be able to bear the necessary pressure on the tongue.

(5) The examiner must have some experience and dexterity in the manipulation of the instrument.

The Instrument.—The spatula, of nickel-plated palladium, which can be cleaned by boiling, is 14 cms. in length, slightly hollowed out on its upper surface, and slightly curved backwards at its distal end, where it is notched to receive the central fold of the glosso-epiglottic ligament; it is fixed at right angles to the handle of the autoscope. It is provided with a small sliding plate, which is adjusted to the proximal end of the spatula, the two together forming a short tunnel 4-5 cms. in length, through which the light is transmitted, and through which instruments for operative purposes may be passed. The spatula for introduction behind the epiglottis is longer, and is straight in its entire length. The handle is provided at the end which receives the spatula with an electric lamp, the rays from which, by means of lenses, are directed along the spatula into the cavity of the larynx; the wires from an electric battery are attached to the other end of the handle, and by means of a button the current may be made or broken at will.

The Examination.—The examiner stands in front of the patient, who is seated on a chair with the head in the position already indicated. All false teeth should be previously removed; the spatula, slightly warmed, is then introduced with the electric current in contact, so that the buccal cavity is illuminated, thus permitting of an accurate placing of the end of the spatula immediately in front of the epiglottis; the handle is raised until the proximal end of the spatula, covered with the sliding plate already described, comes in contact with the teeth of the upper jaw; simultaneously its distal end presses the base of the tongue downwards and forwards. In a satisfactory case the examiner, looking along the spatula, will observe the epiglottis being raised and drawn forwards; then the arytenoid cartilages will come into view, the posterior wall of the larynx, the false and true cords, and, lastly, the trachea, and even its bifurcation may be visible.

No violence must be used; the movements employed for depressing the tongue must be rapid and certain, but not

sharply or painfully carried out, and considerable experience is necessary for satisfactorily conducting the examination. In difficult cases, after preliminary failure, the mucous membrane may be sprayed with cocaine, and where the spatula is introduced behind the epiglottis and an operation is contemplated, then cocaine should be employed.

There appears to be considerable variation in the amount of success attending this procedure. While many patients are quite unable to bear the pressure necessary for the drawing forward of the epiglottis, others again bear it without any feeling of discomfort. With the former it is impossible to conduct the examination satisfactorily; with the latter a good view of the interior of the larynx may be obtained; but even with these this is by no means always the case, because careful and repeated manipulation fails to draw the epiglottis sufficiently forwards even to permit of a view of the arytenoid cartilages. Dr. Kirstein, as quoted by P. Bruns, saw the whole of the larynx in only one-fourth of the cases examined, the posterior part of the larynx in one-fourth to one-half of the cases. In three cases of laryngeal simple tumours recorded by Bruns himself, it was possible in one case to remove the greatest part of the tumour by the direct method; in the second case only the posterior part of the tumour could be seen; and in the third the growths could not be seen at all, so that in these two last cases the growths had to be removed in the usual way with the use of the laryngeal mirror.

Autoscopy will not take the place of ordinary laryngoscopy, nor does Dr. Kirstein suggest that it will; but he looks upon it as a valuable and real aid in diagnosis and treatment. In the case of children, who so frequently resent the ordinary method of examination, the experience of Bruns has been that they can be much more satisfactorily examined by the direct method. Kirstein in operating upon children by his method administers chloroform. The head is then drawn over the edge of the table and is held there by an assistant. The autoscope is held in the operator's left hand, the child's head being gradually raised or depressed until the required position is obtained, and then the necessary operation is carried out. The same position is employed by him for the mere examination of infants and young children, but without the aid of chloroform.

The instruments used for operating with the autoscope resemble in form the instruments used for the nose, the handle being fixed at an angle with the stem. For the larynx they measure from the bend to the point 20 cms. in length, while those for the trachea are somewhat longer. In other respects they do not differ from the instruments in ordinary use.—*Edinburgh Medical Journal, July*, 1896.

42.—INTUBATION IN THE ADULT.

By W. E. Casselberry, M.D., Chicago, Professor of Therapeutics and of Laryngology and Rhinology in North-Western University Medical School, &c.

[Dr. Casselberry discusses intubation, with special reference to acute stenosis of the larynx in the adult. The cases and other parts are omitted here owing to space.]

My own cases would indicate that the technique of intubation in acute stenosis with adults is more varied and at times more difficult than with children, and, since it is an operation the success of which is wholly dependent upon manual dexterity and rapidity of action, advance information as to methods will partake of the highest degree of utility.

I have formulated the following conclusions as to technique, changes in which, however, may be suggested by additional experience:—(1) For one accustomed to the use of the laryngoscope, intubation on adults is easier and more certain under its guidance; therefore, for a patient of adequate composure, and able to maintain the sitting posture, this method should be selected. (2) A patient lacking only composure—one whose inclination is to resist rather than to assist the operator—may be closely wrapped in a blanket to pinion the arms and legs, seated in a straight-back chair, the head inclined slightly backward, the mouth gagged, and the finger used as a guide, as with children. (3) A patient lacking strength to move from the bed, and composure or strength for laryngoscopic insertion, should be placed close to the right edge of the bed so that the operator can stand to the patient's right side; the head and shoulders should be well raised by pillows, the neck moderately extended, and the method by the sense of touch otherwise carried out. Kneeling on the bed in front of the patient is unnecessary. (4) A patient who is moribund, or nearly so may have the tube inserted while in the recumbent position. The operator should be to the patient's right, who should therefore be placed on the right edge of the bed. This brings the operator's right hand more immediately in front of the patient without awkward twisting of his arm or body.

Spraying the fauces with a 5 per cent. solution of cocaine facilitates introduction by whatever method, and tends to lessen the liability to premature expulsion.

The extraction of the tube is especially easy under laryngoscopic illumination; otherwise it is done in accordance with the same principles as regards the position of the patient as pertain to its introduction.

The author's posture method of feeding subsequent to intubation, by inclining the patient's head and shoulders downward, in which position fluids may be swallowed without gravitating through the tube into the lungs, can be successfully used with adults, but naturally with more difficulty at first than with children, on account of unmanageable weight and size. It is best done by hanging the head and shoulders over the edge of the bed downward nearly to the floor. Dr. O'Dwyer states that in chronic cases in adults the posture method of feeding is even more successful than with children. Here there is more time to learn the trick perfectly and to overcome timidity, which may at first impair the usefulness of the method in acute cases. Meanwhile, adults more readily than children may be fed upon semi-solids, such as custards, stiff cornstarch, and oysters, which will slide over the top of the tube without entering it.

Regarding the scope of intubation for acute stenosis in adults, the four cases of laryngeal diphtheria herewith reported, together with one other of which I have personal knowledge, all of which terminated favourably, justify the conclusion that this operation may with advantage be substituted for tracheotomy in that disease.

Concerning acute œdema of the larynx the indications are not so clear. The operation is technically feasible in uncomplicated cases, even when exhaustion is extreme, and I should consider a single attempt justifiable, provided, in order to guard against pressure decubitus, the smallest size of the adults' set of tubes was first selected.

When complicated by having the jaw "set," or by pharyngeal swellings which might obstruct the top of the tube, either or both of which conditions may be encountered in cases of acute œdema of the larynx, secondary to circumtonsillar abscess, Ludwig's angina, phlegmonous angina, retro-pharyngeal abscess, &c., intubation is absolutely contra-indicated and fruitless; efforts thereat can only serve to intensify the exhaustion and suffering of the patient.

There are other acute conditions or acute exacerbation of chronic states which might be remedied by intubation. In a case of arthritis deformans, with an acute exacerbation involving the larynx, the dyspnœa was so urgent that I expected to be compelled to intubate at any moment for several days, and I believe now that much suffering and actual danger to life would have been obviated in that case had I done so.

Dr. W. K. Simpson mentions having resorted to intubation in a similar case of arthritis deformans of the larynx.

Traumatic œdema of the larynx, as by scald, corrosion, or fracture, might in suitable cases be treated in this way.

Laryngismus stridulus, or reflex spasm of the glottis, though rare in adults, might constitute another indication.

Also œdema of the larynx secondary to chronic syphilis or tuberculosis might come within the same category, since the œdema may figure as an acute exacerbation provoking sudden and urgent dyspnœa.—*New York Medical Journal, September* 5, 1896.

43.—INTRATRACHEAL INJECTION.

By Joshua Lindley Barton, M.D., New York,
Attending Physician to the Department of Out-door Poor, Belle Vue Hospital;
Physician to the Lung Department of the New York Throat and Nose Hospital.

[Dr. Barton describes this method in relation to diseases of the trachea, bronchi, and lungs. The following is taken from his paper:]

It appears that if absorption of injected liquids by the lymphatics of the tracheal, bronchial, and pulmonary mucous membrane has been fully demonstrated by competent observers who have also added their testimony to the ease with which injections are borne, one is justified in resorting to intratracheal and intrabronchial medication both as a palliative and as a curative measure.

The technique is simple. A syringe with an endolaryngeal tube, devised by Dr. Muir and manufactured by Ermold, holding four drachms, answers the purpose perfectly. The larynx having been sprayed with a 2 per cent. solution of cocaine, the patient is instructed to grasp the tongue with the right hand, to draw it forward, at the same time throwing back the head and opening the mouth as widely as possible. The operator with the laryngeal mirror in one hand and the syringe in the other, then proceeds as though he were about to make a laryngeal application. As soon as the tube enters the cavity of the larynx the epiglottis is pulled slightly forward, the patient is instructed to breathe, the cords separate, the tube enters the trachea, and the syringe is emptied of its contents. By pointing the instrument to either side the bulk of the medication may be made to enter either the left or the right bronchus. If care is taken when inserting the tube to avoid touching the glosso-epiglottic or the aryteno-epiglottic folds or the inter-arytenoid space, each one of which seems to act as a cough centre, the irritation caused by this procedure

will be found to be surprisingly slight. It is in fact so non-irritating that after a little preliminary training the cocaine spray may be discontinued.

The remedies employed should be soothing and the vehicle non-irritating. For this purpose olive oil, cod-liver oil, glycerine, mucilage, or any one of the petroleum oils may be used. Of the latter the one sold under the name of benzoinol is probably the best. It is tasteless, non-irritating, and is said to contain an ounce of benzoin to the pint of oil. Solutions containing benzoinal, europhen, and menthol, or benzoinal, guaiacol, and menthol, have proved very efficacious in my hands. From 1 per cent. to 2½ per cent. of europhen and from 1 per cent. to 15 per cent. of menthol, or 2 per cent. of guaiacol in place of the europhen will be found to be quite strong enough. The strength may, however, be increased or diminished to suit each individual case, or other remedies, such as ichthyol, may be substituted. From one-half a drachm to one drachm may be injected at each insertion of the tube, and this may be repeated at one sitting until from 2 to 4 drachms have been used.

This method of medication has many advantages, viz.:—(1) The remedy is applied directly to the irritated mucous surface. (2) It immediately alleviates the most distressing symptoms, adding at once to the comfort of the patient. (3) In a certain number of cases the antiseptic effect of the medicine is very pronounced, as shown by the longer interval between the febrile attacks and by their lessened intensity when they do occur. (4) The tracheal and bronchial mucous membrane rapidly absorbs the medication, so that we may expect a general as well as a local effect. (5) We avoid disturbing the patient's stomach with nauseating doses and the shattering of his nervous system with opiates. (6) This method of alleviating the most distressing and annoying symptoms does not interfere in the slightest degree with any other line of general treatment which may be deemed advisable. (7) In cases characterised by an atrophic condition of the tracheal mucous membrane or of pulmonary disease with cavitation leading to retention and decomposition of the secretions, intrabronchial injection will remove the disgusting fetor of the breath consequent upon this condition.

I have treated during the past winter 25 cases by intra-tracheal injection, including cases of severe laryngo-tracheitis, bronchitis, and tuberculosis, and one case of asthma. The cases of laryngo-tracheitis and of bronchitis were rapidly restored to health; the case of asthma was greatly improved, while every case of tuberculosis has been markedly benefited. [Details of 10 cases are appended in the original article].—*Medical Record*, *August* 1, 1896.

44.—THE PHYSICAL EFFECTS OF THORACIC EFFUSIONS.

By CHARLES J. MACALISTER, M.D., M.R.C.P.

[The following is taken from Dr. Macalister's paper, read before the Liverpool Medico-Chirurgical Society:]

My observations with reference to the heart indicate:—

(1).—That it is evident from experiments made on the cadaver that the heart begins to travel towards the healthy side when only a few ounces (between 5 and 9) of fluid have been effused, and the same conclusion was arrived at by feeling the cardiac impulse from the under surface of the diaphragm during the injection of fluid into the pleura of a dog, when only 25 c.c. caused a very appreciable movement.

(2).—There is no pendulum-like movement of the cardiac apex. The axis of the heart remained unchanged after very large amounts of fluid were injected and (in a left-sided experiment) after it had travelled quite over to the right side; but some rotation appeared to take place on an axis parallel to the long axis of the body, because, whether the effusion was produced on the right or the left side, more right ventricle than normal was visible on exposing the anterior aspect of the organ.

(3).—In every experiment, when much fluid was injected, some descent of the heart was observed. This descent is simultaneous with and appears to be largely due to the distension of the upper portion of the pleural sac, but is probably also aided by the descent of the diaphragm on the diseased side to a certain extent.

(4).—The displacement of the heart is not caused by retraction of the lung. The lung on the healthy side becomes distended, and tends to bulge through the interspace.

(5).—The right ventricle (when displaced to the left) is largely covered by the margin of the right lung.

Very few words will dispose of the abdominal viscera, and their behaviour in relation to thoracic effusions. The depression of the diaphragm is less easily made manifest clinically than the pushing over of the mediastinum; and lowering of the abdominal viscera is a late system, only observed in copious effusions. It has to be borne in mind that the intra-abdominal pressure is greater than the intra-thoracic, and that this may in part account for the lesser frequency and degree of its visceral displacements. It is extremely rarely that the liver is greatly depressed, one or two finger-breadths being the usual maximum extent seen at the present day, but formerly the effusions were retained so long that it was not uncommon to have the liver greatly lowered. Considering that left empyema is the

commoner, one would, *a priori*, expect the splenic displacement to be more frequent than the hepatic; as a matter of fact, however, I can find few records of the former, either in my own or in other published collections of notes, whereas the latter is rather commonly noted as having been present. For the explanation of this, I will refer you once more to the condition of the diaphragm in these effusions, and will remind you of the central bulging which takes place, leaving a marginal cul-de-sac near its points of attachment. This is invariably present on whichever side the outpouring occurs; and when on the left side, the head of the spleen always lies in this depression, and so remains practically uninfluenced by the pressure from above. The liver, on the other hand, becomes influenced by the diaphragmatic bulging, and its depression is therefore commoner. In the discussion, Dr. Buchanan recognised the importance of Dr. Macalister's investigations, but took exception to the method of experiment, in that the introduction of fluid into an india-rubber bag placed in the pleural cavity could not perfectly represent what would take place were fluid injected into the pleural cavity itself, as the pressure under which pleural exudations accumulate is not always the same, and undeterminable. Alteration in respiration must also vary in different cases; the inflammatory nature of pleuritis, with exudation, would certainly produce dyspnœa, in proportion to its acuteness. Pleural exudation must be much slower, even in what are called "rapid" cases; and in Dr. Macalister's method of injecting fluid in a comparatively sudden manner, however small, one would expect a sudden dyspnœa. Cases of extensive pleuritic exudation are not uncommon, in which dyspnœa is not at all a marked symptom. An important point shown by Dr. Macalister in a case of pleuritic exudation was that the dull area extended over the middle line, encroaching upon the healthy side, above the level of the second rib, this being usually associated with new growth. Dr. Macalister's statement that the extent of the alteration of percussion note was due to the area of lung covered by fluid, and not proportionate to the amount of fluid, being very considerable in small exudations, could hardly be accepted, unless the lung were prevented from contracting by the presence of adhesions. The loss of breath sounds on auscultation could not be principally due to the diminished action of the diaphragm, irrespective of the amount of fluid; for, by surrounding a normal thorax with a water cushion, the diaphragm working, all sounds are greatly diminished.

Dr. Abram agreed with Traube, O. Vierordt, Douglas Powell, and others, that there is a certain amount of traction by the lungs upon the mediastinum, due to the fact that they are kept

in a slight amount of distension by the pall of the chest wall. This slight distension is an indubitable fact. It followed, he thought, that the first result of an effusion into the pleura was to neutralise the traction of the corresponding lung upon the mediastinum, and to allow that exerted by the lung of the opposite side to pull the heart to the sound side. Later actual pressure was exerted by the effusion, and the heart was now pushed over, and the diaphragm depressed. He considered diminution of Traube's space to be significant of a considerable effusion.—*Liverpool Medico-Chirurgical Journal, July*, 1896.

45.—ACUTE PNEUMONIA WITH HYPERPYREXIA.

By Samuel West, M.D., F.R.C.P., Senior Physician to the Royal Free Hospital; &c.

[Dr. West records a very interesting case in which the hyperpyrexia was treated with success by cold baths, sponging, &c. The details of the case, except in so far as they illustrate the treatment, are omitted here :]

R. K., aged eight years, was admitted into the hospital on February 1. He was well until the day before, when he seemed ailing and out in health, but it was not till the morning of February 1 that he complained of headache and shivered a good deal. Between 6 and 7 a.m. on February 3 the temperature was running up rapidly, and reached nearly 105°, and the patient was sponged again for fifteen minutes. At midday the temperature was nearly 106°, and he was packed for forty minutes, with the result of bringing the temperature down to 101°. At 2 a.m. on February 4 the temperature rose to nearly 105°, and the patient was sponged for fifteen minutes. At 10 a.m. the temperature was over 105°, and he was sponged for fifteen minutes more. At 11 a.m. the temperature was close on 106°, and a mustard bath was given. This brought the temperature down to 99·8°, but it quickly rose again, and at 2 p.m. it was 106·6°, and a cold bath was then given. This had, however, very little effect, and at 6 p.m. the patient was packed for forty minutes, with the result of bringing the temperature down to 99°, but it rose again by 9 p.m. to 103°, and the patient had another bath for sixteen minutes. All this time the patient was much cyanosed, desperately ill, and in a most critical condition. The pulse was 126 and respirations 46.

At 2 a.m. on February 5, five hours after the previous bath, the temperature was 105·2°, and another bath was given, in

which the patient remained for ten minutes. This brought the temperature down to 101°, but it rose again gradually, and at 10 a.m. it was 106°, and another bath was given for ten minutes. This was accompanied by a most astounding drop of temperature, for it went down to 98·7°. The previous baths had been given at the temperature of 90° cooled down to 60°, but this bath was given at the temperature of 70°, and brought down by ice to 60°.

Two hours after the bath the temperature had risen to 103° and at 1 p.m., that is five hours after the bath, it had risen again to 104°, but no further bath was necessary till 9 p.m., when the temperature was 105·4°, and a bath was given for twelve minutes. This was attended with a drop of temperature to 99°, but in two hours it had risen almost as high as before, and at 1 a.m. on February 6 the patient was sponged for ten minutes. At 6 a.m. another bath became necessary, the temperature having risen to 105·4. After this bath the temperature fell to 100°, but rose in a couple of hours to 103°. From this time it began slowly to fall during the rest of the day, and at 8 a.m. on February 7 was below normal.

About mid-day on February 2 the temperature began to rise with great rapidity; starting below normal at 8 a.m., it reached at 1 p.m. its maximum of 106·8°. A bath was then given at the temperature of 70° cooled down to 56° for twenty minutes. This reduced the temperature to 97°, but it rose again up to nearly 104° within a very short space of time—a couple of hours; then it fell, but rose again.

Throughout February 8 no bath was necessary until mid-day, when the temperature was 105°, and then a bath was given for fifteen minutes; another bath became necessary at 7 p.m. for sixteen minutes.

The patient got through February 9 pretty well, except that at 2 p.m. the temperature reached 106·4°, when another bath became necessary for twenty minutes. This had the effect of reducing the temperature as usual, and from this time no further baths were necessary. The temperature remained high, with somewhat irregular ups and downs.

On February 10 it began to decline, and on February 11 it had fallen as low as 96·4°. The crisis commenced at 9 a.m. on February 10 and was complete by 6 a.m. on February 11—that is, in twenty-one hours.

On February 9 the patient was so extremely ill that it appeared hardly likely he could recover, and when the temperature ran up to over 106° it seemed as though the end had come; and he was only brought through this crisis by the free administration of stimulants. Yet this must have been the precritical disturbance, for after that time the temperature fell slowly, and improvement commenced.

Remarks.—The case was one of the very greatest severity; in fact, I do not know that I ever saw a case of the kind with symptoms of such gravity in which recovery took place. The general condition of the patient stood in no relation to the amount of consolidation in the lung, for this was never very extensive, though sufficient to confirm the diagnosis made. The delirium was constant throughout the acute stage of the disease, but for the first few days the pulse and respiration were not markedly abnormal, and it was not till the last day or two that the heart began to run up and beat rapidly, when the pulse became about 140. Grave as the condition of the patient was throughout, it became much more serious just immediately preceding the crisis, and then it almost seemed as though the patient must die, and he was only restored with much difficulty and pains.

It was the height of the temperature that was the characteristic feature of the case throughout, and in this respect it was very remarkable. It was a truly hyperpyretic case, marked not so much by the great average height of temperature as by the great oscillations that took place in it, and the very rapid rises which occurred without assignable cause. This being so, the temperature was taken throughout the acute stage of the disease every hour, and whenever the temperature seemed to be running up, a bath was immediately given and the temperature reduced. Though the temperature rose on two occasions over 106°, still there is no knowing how much higher it might have gone if it had been left untreated, or the rise had not been detected. There can be no doubt that it was to this constant watching of the temperature, its reduction by sponging, packing, and cold baths, that the ultimate recovery of the patient is due.

During the nine days of the fever the patient had two mustard baths, was sponged six times, packed twice, and had ten cold baths; in fact, during the nine days' illness, the temperature was attacked no less than twenty times in one way or another by cold. In no instance were any troublesome symptoms produced by the methods employed. The patient never complained of feeling cold, uncomfortable, or faint; on the contrary, though he often complained of chilliness, when the temperature was high, he appeared to be comfortable and happy when in the bath, the breathing became deeper and freer, and whatever wheezing there was in the chest rather improved than became aggravated, while the pulse improved in tension, fell in number of beats, and the general condition of the patient was altogether better. No antipyretic drugs were used throughout, nor do I think they would have been at all desirable, for the patient was in a condition of collapse on

several occasions before bathing was used. He was given during the acute stages three grs. of citrate of caffein, and three minims of liq. strychnine every three hours, and this appeared to do him a great deal of good,

Cases of such persistent, obstinate hyperpyrexia in pneumonia are very rare, but, as the case showed, when they occur they may be treated like other cases of hyperpyrexia with the same advantage by packing, sponging, and cold bathing. Indeed, there is nothing else to do, and it is to the active treatment by these methods that the recovery of this patient is due, as well as, it ought to be said, to the careful nursing, night and day, by the sister and nurses of the ward, and to the devoted attention of my house-physician, Mr. Butler.—*British Medical Journal*, *July* 4, 1896.

46.—ABSCESS OF THE LUNG.

By E. Fletcher Ingals, M.D., Chicago.

[The following is taken from Dr. Ingals' paper, based on 7 cases. In 4 cases the abscesses were aspirated, and of these 3 recovered. In the fatal case pneumotomy was also performed. In the 3 other cases the abscess ruptured into the bronchi, and pus was expectorated. Of these only 1 recovered, but 1 of the fatal cases was an example of embolic abscess.]

The primary pulmonary abscess usually speedily follows some exposure or accident which causes acute inflammation of the lung, the inception being marked by a chill and fever very similar to that of croupous pneumonia, though commonly neither are quite so severe as in the latter disease ; however, the abscess may not occur until some time after the acute stage of the pneumonia has subsided. In either case the formation of pus is attended by repeated rigors, followed by hectic fever, similar to the symptoms indicative of suppuration in other parts of the body. Pain, sometimes very severe, is usually present in the beginning of the disease. The temperature fluctuates two or three degrees during the day, corresponding to the irregular chills and fever. In the milder cases, although the pulse is rapid, the fever is not pronounced ; but in most instances the constitutional symptoms are very like these of croupous pneumonia, and they are apt to continue for two or three weeks. In favourable cases spontaneous opening of the abscess and convalescence may be expected within twenty or thirty days, and in most of them the pus will escape within ten or twenty days. The abscess may open into the bronchi, mediastinum, pericardium, or pleura, or, through intervening

adhesions, may discharge its pus into the abdominal cavity or externally. The pus is not usually offensive, except when it has been long retained or gangrene has occurred. The sputum generally contains small yellowish or dark pieces of long tissue visible to the naked eye that, upon microscopic examination, are found to consist of elastic lung tissue.

The essential signs of the disease are: — Dulness, with feebleness of respiration or absence of the respiratory murmur over the abscess, combined with indistinct râles in the lung tissues immediately about it, and sometimes with bronchial breathing. After escape of the pus the well-known signs of a cavity may be present for a short time, though in the primary affection the lung is apt to contract speedily, so that cavernous respiration is present for only a few hours; or refilling of the cavity with pus may prevent the respiratory and vocal sounds common over a vomica.

Diagnosis.—The affection is liable to be mistaken for bronchitis, pneumonia, and acute or chronic pleurisy. The most important features in the diagnosis are the occurrence of symptoms similar to those of acute croupous pneumonia, but followed by irregular chills and hectic fever indicative of the formation of pus, and dulness more or less circumscribed that is apt to be more distinct over a small region than that of pneumonia, but less distinct than in pleurisy. Atypic respiratory and vocal signs, unlike those we expect to find either in pneumonia, pleurisy, or bronchitis, are a most important element in the diagnosis, and, finally, the sudden expectoration of a considerable quantity of pus containing elastic lung fibre reveals the true nature of the disease.

Prognosis.—Pulmonary abscess may prove fatal within four or five days, but usually even fatal cases extend over two or three weeks, or sometimes many months. When an abscess opens spontaneously it usually does so within three weeks. In unfavourable cases, especially of secondary abscesses, many of the patients die of exhaustion or as the result of infection of some other part, and others succumbed to repeated inflammation of the lung tissue about the pus cavity. Abscesses of the lung resulting from pyæmia, gangrene, tuberculosis, embolism, or the infectious diseases are necessarily very grave. Those that we have classed as primary are much more likely to recover.

Treatment.—The treatment of abscess of the lungs, when of secondary origin, must be that appropriate for the primary disease, with such tonics and stimulants as appear necessary, and ample nourishment. The early treatment of primary pulmonary abscess is very similar to that of lobar pneumonia. In practically all cases the expectant form of treatment is the *best* in the beginning, but when an abscess can be distinctly

located, especially if near the chest wall, the question of surgical interference must be considered. Remembering the natural tendency of this disease and the possible dangers of an operation, I believe that the greatest good to by far the greatest number of patients will be obtained by pursuing the expectant plan for at least three or four weeks. I know that some cases may be shortened by an earlier opening, but I am satisfied that some lives would be lost by this procedure which might be saved by waiting. After three or four weeks, if the abscess does not open spontaneously and an accurate diagnosis can be made, surgical measures should be adopted. The comparative safety with which surgical operations may be made under antiseptic precautions, and the glamour surrounding extensive and showy operations, strongly tempt the surgeon to cut down at once, resect one or more ribs, and perforate the lung to allow the escape of pus. That this operation is proper and desirable in certain cases we do not deny, but that it should be held as a *dernier ressort* seems to me to have been demonstrated by common experience, and by the records of a few cases in my own practice.

Aspiration alone is competent to effect a cure in many cases where necrosis of lung tissue is small, even though the collection of pus may be large. Aspiration combined with washing out of the cavity by disinfectant solutions would be effective in others, but where there is a considerable necrosis of lung tissue, or where aspiration has been tried and failed, the more radical operation of cutting down and resecting a rib, and then perforating the lung by thermo-cautery, should be adopted. When we have decided that an abscess of the lung is present, or when, after a thorough examination by a competent diagnostician, we are led to believe that one exists, exploration to discover the pus should be made, in several places if necessary, with a fine clean needle at least three inches in length. Having in this way located the abscess, aspiration may be done by any of the common instruments and a comparatively large needle. It has always been my custom to disinfect the aspirator needle by dipping it into a solution of equal parts of carbolic acid and olive oil or oil of almonds, and it has seemed to me that this strong solution is especially beneficial in cauterising the tract of the wound, and thus preventing absorption of purulent matter. The pus cavity should be emptied by the aspirator and the operation repeated at the end of five or ten days if it refills, and again and again if necessary. The question of washing out the abscess will have to be determined by the individual operator; but usually it is not best unless the pus is very offensive, when there is reason for believing that a considerable mass of gangrenous lung tissue is present within the abscess cavity.

When an abscess results from gangrene or from any other cause that leads us to believe free drainage necessary, and after aspiration has been tried and failed, we should resect a rib in the ordinary method. If the pulmonary pleura is found adherent to the costal pleura we may at once open the lung with the thermo-cautery; if not, the two should be stitched together, and fifteen or twenty-four hours allowed for adhesion to take place before the lung is opened, in order to prevent the escape of pus into the pleural sac. Preliminary aspirations, as already recommended, will usually excite adhesive inflammation if the latter has not already occurred in the natural course of the disease, so that the stitching will be unnecessary. Having made a free opening and secured adhesion of the two pleural surfaces, it only remains to open through the lung tissue and introduce a large-sized drainage tube, or tubes, after which it is managed in the same manner as other large abscess cavities, the patient being supported by tonics and nutritious diet.—*Journal of the American Medical Association, August* 22, 1896.

47.—BACTERIOLOGICAL EXAMINATION IN THE EARLY DIAGNOSIS OF PULMONARY TUBERCULOSIS.

The symptoms of incipient pulmonary tuberculosis are few, not marked and not uniform. They are frequently not sufficient in number or importance to attract the attention of the affected individual, and their significance is often not recognised by physicians, as there are other conditions which closely resemble incipient pulmonary tuberculosis. Tuberculosis results from the reception into a susceptible system of tubercle bacilli. These are usually drawn in with the air inspired, and find lodgment in some portion of the respiratory passages. There they increase in number, when conditions favourable for their multiplication exist, and by their growth set up an inflammation which becomes evident in the formation of new tissues, the so-called tubercle. The inflammatory changes are usually at first very slight, and the effects entirely local. Moreover, in this early stage there is a marked tendency to a localisation and restriction of the process and to an entire recovery. Many persons get well untreated. In such cases the tubercles are gradually replaced by fibrous tissue, and the bacilli die or are rendered harmless. At this time, *i.e.*, when a patient has tuberculosis, but when the disease is confined to a small, sharply circumscribed area, there is the best opportunity for successful treatment.

On the other hand, in a large percentage of the unrecognised and neglected cases, recovery does not take place, but the tubercular process extends, new tubercles form, the old ones become necrotic, and there is a coalescence of separate foci of infection, forming large areas of disease, till a great part of one or both lungs is affected. At the same time, the bacilli in their growth form poisons, which are absorbed by the system, and in the diseased or necrotic tissues other bacteria are deposited, producing the so-called mixed infection.

The disease has now assumed a far more serious aspect, is easily recognisable, and constitutes what is commonly called consumption. With few exceptions, this progresses to a fatal termination. The classical symptoms commonly assigned to early tuberculosis, *i.e.*, persistent cough with expectoration, loss of appetite and weight, hæmoptysis, are really signs, in most instances, not of the incipitent affection, but of the advanced disease. In the early stage, a positive diagnosis is possible only when tubercle bacilli are found in the expectoration. It is an impression commonly held that the bacilli are not found unless the disease has advanced to a point at which the signs presented on a physical examination are themselves almost conclusive. Such, however, is not the case; bacilli are not infrequently found in the expectoration when the physical signs are indicative only of a slight bronchitis, or when there are absolutely no physical signs obtainable. When signs of consolidation are present the affected area is always considerable, and always far greater than would be inferred from the evidences obtained on examination. It is, therefore, of supreme importance that the diagnosis should be made at the earliest possible moment. The expectoration should be examined early, and, if bacilli are not found immediately, should be examined repeatedly in every case of doubtful diagnosis. All cases, also, in which there is a cough, with or without expectoration, persisting for more than a few weeks, and all cases in which there is unexplained pallor, loss of appetite, languor, or loss of weight (general debility), even if the cough appears to be almost entirely absent, should be considered cases of doubtful diagnosis, and bacilli should be sought for in the expectoration.

In conclusion, emphasis should be laid upon the following clearly demonstrated facts:—First—Incipient tuberculosis tends to recovery. Second—Advanced tuberculosis, with or without mixed infection, tends to a fatal issue. Third—In all coughs which last more than a few weeks, tuberculosis is to be suspected as a cause. Fourth—Successful treatment and prophylaxis demand the earliest possible diagnosis. Fifth—The positive diagnosis of incipient pulmonary tuberculosis properly so-called is possible only when tubercle bacilli are found in

the expectoration. Sixth—Repeated examinations of the expectoration are frequently necessary to demonstrate the presence of the tubercle bacilli in incipient cases of pulmonary tuberculosis.—Circular of Information from the New York City Health Department.—*Medical News, August* 22, 1896.

48.—RESPIRATORY EXERCISES IN THE TREATMENT OF DISEASE.

By HARRY CAMPBELL, M.D., F.R.C.P.Lond., Physician North-West London Hospital.

The therapeutic value of respiratory exercises has not received the attention it deserves. By their means we are able to develop the lungs, quicken the circulation of blood and lymph and profoundly modify the functions of the abdominal and pelvic viscera. Many advantages follow from well-developed lungs: the respiratory changes are carried on actively, and this conduces to bodily vigour; the tendency to pulmonary diseases is much less in large, well-developed lungs than when these organs are puny and ill-developed. Hence respiratory exercises diminish the liability to phthisis, bronchitis, and pneumonia. A further great advantage results from the possession of large, well-developed lungs, in that the larger these organs the less is the work put upon the right heart; for pulmonary resistance varies inversely as pulmonary capacity. Now, in all diseases of the heart it is of the greatest importance to reduce pulmonary resistance to the minimum. Especially is this the case in failing left ventricle and in mitral disease, in both of which the duration of life depends chiefly upon the time the right heart can hold out; and this, of course, is largely determined by the amount of pulmonary resistance.

The aid which the respiratory movements afford to the circulation of blood and lymph is of the greatest value in the treatment of heart disease. Not only, for instance, do they favour the flow of blood into the right heart, and through the lungs, but they further help the flow of lymph from the peritoneum into the pleura, and from the pleura and pericardium into their respective lymphatics. An actively moving diaphragm is very effective in preventing, or removing, ascitic accumulations.

The rhythmic movements of the diaphragm also serve a good purpose in rhythmically compressing and dislocating the abdomino-pelvic viscera. There can be no doubt that the functions of these organs are profoundly affected in this manner. These activities are, in fact, so closely bound up with this rhythmic influence, that the latter must be regarded

as physiological. Hence we may expect to exert a beneficial effect on the functions of the abdominal and pelvic viscera, by means of long-continued, deep, diaphragmatic breaths. It is not surprising that dyspepsia should be benefited in this way.

Respiratory exercises are also very helpful in functional disorders of the nervous system, the good in these cases being largely due to their effect upon the circulation of blood and lymph within the cranium, as well as upon the functions of the abdominal and pelvic viscera.

A further advantage of these exercises lies in the increased mobility of the bony chest which can be brought about by their means. The main difficulty in hypertrophous emphysema is the inability to adequately expire; and this, Dr. Campbell contends, depends upon fixity of the bony chest. Expiratory exercises should be resorted to in these cases; and if they are begun sufficiently early in the disease, its advance may be stayed, and life materially prolonged.

There are three distinct types of breathing—diaphragmatic, lower costal, and total costal. More than twice as much breath can be taken in by a total costal as by a pure diaphragmatic inspiration, a fact not generally recognised. The pleuræ enable the lungs to expand more or less equally in all their parts, no matter what mode of breathing be adopted. Such equal expansion is, however, prevented by pleuritic adhesions. When these are extensive the apical portions cannot expand during ordinary quiet breathing, which is a combination of lower costal and diaphragmatic. In such cases total respirations should be frequently practised.—*Medical Press and Circular*, *September* 2, 1896.

[This is an abstract of a paper read at the meeting of the British Medical Association, at Carlisle, July, 1896.]

DISEASES OF THE ORGANS OF DIGESTION.

49.—RECTAL EXAMINATIONS IN THE DIAGNOSIS OF ABDOMINAL DISEASE IN CHILDREN.

[The following is taken from a leading article in the *Medical Record*, August 29, 1896:]

It has been truly said that more mistakes in diagnosis are made from failure of observation than from lack of knowledge or misinterpretation of facts. This is more especially true in the case of children and infants, in whom subjective manifestations are not to be depended upon even when

intelligently conveyed. It is for this reason that any addition to our diagnostic resources will be hailed with satisfaction, and in such a light must be viewed the recommendations contained in a communication dealing with the subject of rectal exploration in the diagnosis of abdominal disease in children presented by Dr. George Carpenter at a meeting of the East Sussex Medico-Chirurgical Society (*The British Gynæcological Journal*, May, 1896). His first experience in this connection, he relates, was acquired in the discovery by a senior colleague of a myeloid sarcoma of the anterior surface of the sacrum in a little girl who had long suffered from constipation. Influenced by this example, Dr. Carpenter began the systematic employment of rectal examination in the diagnosis of abdominal and other obscure disease in children. He cites a number of illustrative cases in which this mode of procedure rendered the utmost service. Thus, in the case of a small boy, 3 years old, presenting an umbilical fistula and enlargement of the mesenteric glands, rectal examination disclosed the existence of a pea-sized nodule in the position of the prostate gland, and, extending from it, slight enlargement of the seminal vesicles on either side. A probe introduced into the sinus reached the prostatic enlargement, and it was concluded that a tuberculous abscess of the prostate had burrowed along the urachus and had found vent at the umbilicus.

In the diagnosis of tuberculous peritonitis digital examination through the rectum, in conjunction with bi-manual palpation, is capable of yielding conclusive information, disclosing, especially in the early stages, a lumpiness due to matting of the intestines. An anæsthetic facilitates the exploration, but is not always absolutely necessary. With the patient's legs well drawn up, the thighs flexed on the abdomen, the pelvis raised on a cushion, the left hand of the examiner on the abdomen, and the right index finger in the rectum, the right side of the abdomen can be explored. By reversing the hands the left side can be examined up to a level depending upon the length of the examining finger and the size of the child. If the intra-abdominal tissues that can be included between the finger in the rectum and those upon the abdominal wall are inconsiderable in thickness, peritonitis can be safely excluded. If, however, the thickness of the tissues is considerable, it is probable that the peritoneal coat of the bowel is thickened by lymph. Bi-manual palpation is capable of disclosing not only intestinal matting, but also peritonitis without definite abdominal nodules, or a thin plaque of omental thickening perhaps coarsely granular. At the same time glandular involvement, if present, can be appreciated. The partially filled bladder must not be mistaken for a peritonitic exudate, and conversely a localised collection of

pus or other fluid may simulate a distended bladder. The use of a catheter will aid in the differentiation. If doubt exist as between fecal lumps on the one hand and glandular enlargement or intestinal matting on the other, an enema will make the distinction. Intestines involved in peritonitis tend to move *en masse* when pressed upon, and do not yield so quickly to the fingers as in health. Small, empty, and constricted coils of intestine may yield a sensation similar to that of inflammatory thickening of the intestine, but the mistake is not likely to happen more than once, and will be avoided if such a condition is borne in mind.

Rectal examination may thus not only give valuable positive information in a doubtful abdominal case, but it may throw a totally different light upon a case of abdominal disease which may appear to admit of but one interpretation. In the case of a child presenting broncho-pneumonia and an abdominal tumour following whooping-cough, it was feared that tuberculous peritonitis existed; but rectal examination, with bi-manual palpation, disclosed the tumour to be a horse-shoe kidney. Malignant disease, and especially sarcoma, may give rise to nodules which can sometimes be detected only by rectal examination or by bi-manual palpation. Intussusception, likewise, may be discoverable only by this means. Simple inflammatory affections of the peritoneum may simulate tuberculous or other lesions by the formation of abdominal tumours. Abdominal abscesses are often tuberculous, but occasionally they have a different origin, sometimes starting from the vermiform appendix, rarely from an antecedent pneumonia or following typhoid fever, and are sometimes of unknown origin. A not common variety of abdominal tuberculosis is attended with involvement of the mesenteric glands, in the absence of other complications. Even less commonly the intestines are surrounded by tuberculous false membrane, which can be readily stripped off. The invaginated portion, in case of intussusception, conveys to the examining finger a sensation like that of the os uteri advanced in pregnancy. With a knowledge of this fact the differentiation from tuberculous peritonitis may sometimes be made.

In children the sacrum as well as the rectum is almost straight. The infantile bladder is egg-shaped, with the larger end downward, and as the pelvis is shallow it is almost entirely an abdominal organ. As soon, however, as the child begins to walk the bladder sinks more into the pelvis, though even then its attachments are so loose that it readily rises wholly into the abdominal cavity when distended or otherwise displaced—a feature observed almost until the period of puberty. The child's uterus consists almost entirely of cervix, and it lies in

the upper part of the pelvis. At birth the ovaries have descended as far as the brim of the true pelvis, but in children a few weeks old they are found close to the external iliac arteries at the side of the pelvis. The ovaries are for the most part elongate oval in shape; occasionally more or less rounded organs are found. The falciform or utero-sacral ligament forms a guide to the oviduct. The former pursues a sickle-shaped course surrounding the rectum, being attached behind to the sacrum, and in front to the lower part of the cervix. Using this structure as a guide, the tubes and ovaries, which are on a higher plane, can be readily manipulated between the exploring finger and the bony wall of the pelvis, or bi-manually. The ureters can be examined at the same time. It is sometimes possible to detect in the ovaries the small cysts or dropsical ovisacs not infrequently found post-mortem. The uterus, on account of its mobility, is not readily detected in this way, but if the bladder be emptied any marked abnormality can be appreciated by bi-manual palpation. In young children the uterus can be rolled between the finger and the symphysis pubis, and its contour made out with ease. Ovaries and tubes may be displaced into the inguinal and crural openings. A case is on record of a child three months old in whom an ovary and oviduct that had descended into the inguinal canal were removed. Tuberculosis of oviducts, uterus, and ovaries is extremely rare in children. Inflammatory disorders of the tubes and ovaries in children have received but little, if any, attention. A case is on record of a little girl in whom symptoms of pelvic peritonitis developed in the sequence of an attack of gonorrhœa. Salpingo-oöphoritis sometimes complicates vulvo-vaginitis in children. The inflammation may subside into latency, and be revived at the period of puberty.

With the knowledge thus far gained, as indicated in the foregoing delineation, an agency of practical value is placed in the hands of the clinician in the employment of rectal examination in the diagnosis of abdominal and other disease in children.

50.—THE INDIGESTION OF BREAST BABIES.

By James Carmichael, M.D., F.R.C.P.,
Physician to the Royal Edinburgh Hospital for Sick Children.

[The following is taken from Dr. Carmichael's paper. The cases and other portions have been omitted:]

For many reasons less attention has been paid to the gastro-intestinal affections met with in breast babies than in those nursed artificially. Breast milk is the natural, and ought to be

the sole food of the infant, under physiological conditions, during the first year of life. Unfortunately there is too often a departure from the normal state, and the child, and perhaps also the mother, may suffer during the lactating period. The natural pride and instinct of the mother is apt to lead to the presumption that all is going well with her and the infant, when, perhaps, in reality she is not a good nurse, and the child is suffering more or less, and not thriving. How often do we get an affirmative answer from the mother when we put the general question, "Have you plenty of milk?" It is the duty of the practitioner to take this reply only for what it is worth, and that is often very little. He must judge for himself, unprejudiced by any notion of the mother. The breasts should be carefully examined, and also the milk. The health of the mother and of the child as to its nutrition, growth and development should be inquired into, in order to arrive at a correct opinion.

In America the question of infant feeding in all its aspects has received the well-merited attention which it deserves, and which it has not met with in this country. The greater prevalence of diarrhœal disease during the tropical summer of the American continent has stimulated study and research on this important subject. Milk laboratories have been established in the larger cities, and the feeding of infants has been placed on a comparatively sure and scientific footing. Owing to the researches of such men as Jacobi, Morgan Rotch, Emmet Holt, Lewis Smith, Meigs, and others, we are now furnished with scientific data to guide us in the study of the subject. In this country the question of our milk supply is now receiving some attention from sanitarians, but we have as yet no ready means available to the general public of obtaining pure or properly sterilised milk on a large scale, nor of having milk analysed or tested in laboratories established for the purpose. I think the question of the establishment of such a laboratory in the city of Edinburgh is one well worthy of the attention of our sanitary authorities. We would then have a ready means of getting milk analysed at a small cost, and also be able to obtain "supplies" of standard milk and cream separated by the centrifugal process, which is the only one whereby it can be obtained in a fresh state. The cream used at present, as prepared in our dairies, after having been exposed to the air for from twelve to twenty-four hours in open flat dishes, is a dangerous commodity for feeding young infants, and even for family use. It is necessarily impregnated with micro organisms, and therefore poisonous. Our sanitary authorities, in giving attention to milk, ought to supervise the cream supply as well.

In inquiring into the causes of indigestion in breast babies, we assume that, in a healthy child nursed by a healthy mother,

it rarely, if ever, occurs. The conditions which lead to a departure from normal conditions, and which injuriously affect the child, are numerous. A certain group of causes which may affect both mother and child simultaneously I shall merely mention, without further comment. I refer to defective hygienic conditions generally, such as unhealthy, low-lying, and damp dwelling-houses, noxious effluvia from drains, or malarial poison. Under such circumstances both mother and child are apt to suffer, unless removed from the injurious influences. As it is to the mother specially that we have to look when the child suffers, we find that any departure from normal health is apt to affect her milk supply.

General debility is perhaps one of the most frequent causes of inability to suckle. A large proportion of mothers in the present day are unable to nurse, or only to do so partially, from causes not always well ascertained in any given case. Multiparæ who were able to nurse the first baby are often less able to do so on subsequent occasions. Too frequent pregnancies are sometimes a fruitful cause of inability to nurse. The system becomes soon exhausted and the nerve-tone lowered, the appetite defective, and lactation fails. Many other causes are at work, and many of these lie deeply at the root of our social system. I cannot help thinking that in some respects the upbringing of girls in the present day is unfavourable to a healthy maternity. Poor women who are badly fed and overworked are often inefficient nurses. From a different class of causes women of the upper classes of society who lead a fashionable life, with all its dissipations and excesses, take little exercise, and live too high as regards feeding, never make good nurses. Mothers suffering from any disease of a chronic nature, whether organic or functional, may be unfit to nurse their babies. Thus gouty women who suffer from any of the irregular forms of this disease, such as gastric or hepatic derangement, are unable for lactation. Over-anxiety and mental worry are fruitful causes producing the same results. Phthisis or syphilis—certainly the former—is a contra-indication to lactation, and so we might enumerate many other morbid states which are likely to interfere with normal lactation. Suffice to say that ill-health in the mother, from whatever cause, whether functional or organic, is apt to prove a hindrance to suckling. Before leaving this part of the subject we must refer to the condition of galactorrhœa, the causation of which is not well ascertained, but must in some way or another be closely connected with the nervous system. From whatever cause, in this affection there is an over-excitability of the secreting functions of the milk glands, leading to a constant flow of watery milk, which is unsuitable and insufficient as a nutriment for the infant. Other

causes of a local nature may be met with in the breast itself; thus mammary abscess often, but not always, interferes with the continuance of lactation. Malformed nipples are also a serious bar to nursing. Ulceration of the nipples is another and common cause.

Clinical Features of Indigestion.—Whenever the milk of the mother is defective in quantity or quality, the child is apt to suffer. It does not thrive or grow at the normal rate. Instead of being plump and firm and happy, it is soft and flabby, and is always crying and never appears to be satisfied. Its skin is harsh and dry. The tongue is somewhat red, often slightly furred. Vomiting is not unfrequent from gastric catarrh. The stools are unnatural, and present various appearances depending on the quality of the milk. They are generally loose, and seldom have the natural mustard colour or consistency; but are usually pale, and often of an ashy gray colour, sometimes greenish, or mixed gray and green. The soft curd of the mother's milk is present undigested in little granular-looking masses. There is an excess of mucous secretion, sometimes little streaks of blood. As a rule, indigestion of mother's milk is more frequently intestinal than gastric, diarrhœa being more common than vomiting. This appears to be largely due to indigestion of the fatty and proteid elements of the milk. Infants, in regard to their digestive capabilities, are but little men and women, and it is certain they have their idiosyncrasies likewise. The milk of a mother seems to be suited to her own child under physiological conditions. It has been proved over and over again that a child which is thriving on its own mother's milk if put to another may suffer, even although the woman is healthy and her milk be found on analysis to be of good quality.

With regard to the management of indigestion generally, we must ascertain the cause, and look to the mother and her habits. We should carefully examine the breasts and the milk, and the evacuations of the child. In this way we are enabled to arrive at a conclusion as to the cause of the indigestion in the greater majority of cases. I have already alluded to the general health of the mother as affecting the milk supply. If there is disease, functional or organic, of a persistent nature, the case must be considered in all its bearings, and a decision come to as to the possibility of continuing lactation with any prospect of success.

The occurrence of menstruation is one that requires careful consideration in regard to nursing. Analyses show that during the menstrual period the milk is deteriorated in quality, and gives rise to more or less disturbance, often of a trivial nature, in the child. On the cessation of the menstrual flow there is generally a return to normal conditions as regards the quality

of the milk, so that menstruation in most cases is not a bar to nursing. It may come on a few months after lactation has commenced, and not recur for several months, so it is undesirable to wean the baby if it can be avoided on the occurrence of the first menstruation. It is a very different matter when pregnancy occurs. In this case it is necessary and desirable that the child should be weaned.

The diet and regimen of the mother during lactation is of the first importance. It must be borne in mind that the whole process is a physiological one, and that a healthy mother requires really no special treatment during the nursing period. She ought to take her usual food, a plain and mixed dietary, and have a due amount of open-air exercise. A good nurse generally has an excellent appetite and digestion, and is usually able and ought to eat a somewhat larger quantity of food than at other times, and probably a shorter interval between meals may be advisable. She should have a late meal, and in the early morning some soup, or a glass of milk or cocoa and a biscuit or bread and butter. It is desirable that a mother in good average health should fulfil the maternal duty of nursing her child if possible. I conceive it is our duty to encourage mothers to nurse their children if there is no distinct contra-indication. Inquiry must be made into the habits and hygienic conditions under which the mother is living. The milk must be examined, and will not fail to give us valuable information. If it is deficient generally in quantity, we must endeavour to inspire hope in the mother that she may yet be able to nurse her child; and if her appetite and digestion are good, advise her to take an increased quantity of the lighter and more quickly digested nutriments, with plenty of liquid. If she has too much milk, the fluids must be reduced and the solids increased. Irregular suckling must be prohibited, as a common cause of indigestion in the infant. If chemical examination of the milk shows increase or diminution of the proteids, fat, or solids generally, we must prescribe accordingly. To increase the solids, give the child the breast more frequently, prevent the mother from over-exerting herself, and do not let her drink too much. To decrease the solids, order longer intervals between the nursings, more exercise, and a larger amount of fluid nutriment. Increase of fat indicates the need of less animal food in the dietary. Diminution of fat requires a larger quantity of animal food. The most certain way of regulating the amount of proteids is by muscular exercise, allowing plenty of exercise if the amount of proteids is too large, and decreasing the amount of exercise if they are deficient.

In conclusion, I would like to say that it seems to me more than ever necessary to impress on students and young

practitioners the need and importance of the study of that part of preventive medicine which deals with the food supply, whether natural or artificial, of our infant population. Happily, greater facilities are now given for this in the longer period of study required for medical degrees. Inseparably connected with the question of maternal feeding is the no less important one of the artificial rearing of infants who are unable to obtain breast milk. The huge mortality of infants under one year is hardly reduced to a lower level than it was half a century ago, when in England and Wales no less than 76,328 children under twelve months died, out of a total of 350,101 deaths in one year. Want of breast milk and bad artificial feeding are largely responsible for this. Surely it is our duty, as a profession, to try and stem this tide of mortality.—*Edinburgh Medical Journal*, *June*, 1896.

51.—THE CLASSIFICATION OF THE DYSPEPSIAS.

[The following is taken from a leading article in the *Boston Medical and Surgical Journal*, August 27, 1896 :]

One of the latest attempts at a rational classification is that of Albert Robin, whose elaborate series on the dyspepsias is being published in the *Bulletin Général de Thérapeutique*.

"There is dyspepsia," he says, "whənever there is any disturbance of the gastric digestion. Now as there is no gastric affection which is not accompanied with functional troubles of the organ, the word dyspepsia sums up the entire gastric pathology."

The first general division is that of Cullen, into dyspepsias that are primary or idiopathic, and those that are symptomatic of a general or local affection. Idiopathic dyspepsias are :—(1) Dyspepsias due to vices of alimentation, (2) dyspepsias due to troubles of gastric innervation, (3) dyspepsias of mechanical origin, (4) dyspepsias of medicinal origin, (5) dyspepsias due to professions, (6) dyspepsias due to conditions of climate.

(1) Vices of alimentation pertain to the manner of eating, to what is eaten, to what is not eaten, comprehending all faulty habits, excesses and defects of alimentation, the fruitful sources of much of the digestive suffering which is daily witnessed.

(2) Dyspepsia by trouble of innervation is exemplified whenever nervous perturbations entails disorders of secretion or muscular movements of the stomach (mental overwork, care, worry, depressing emotions, intense thought and study after meals, &c.

(3) Dyspepsias of mechanical origin are such as result from a tight corset, sitting all day in a bent posture at the desk, &c.

(4) Climatal influences, such as excess of heat and cold and confined air, are well-known causes of dyspepsia.

(5) Under the head of medicinal dyspepsias are included such as are due to the abuse of mineral waters, of tea, of iodide of potassium, &c.

(6) Dyspepsias due to professional causes are often exemplified in the workmen in coal mines (from inhalation of coal dust), and rubber factories (from absorption of carbon disulphide), and in persons who lead too sedentary a life (book-keepers, journalists, &c.).

The "secondary dyspepsias" are:—(1) Dyspepsias symtomatic of diseases of the stomach (chronic gastritis, ulcer, cancer, dilatation); (2) dyspepsias due to hepatic and intestinal troubles (biliary congestion, cirrhosis, duodenitis, catarrhal enteritis, &c.); (3) dyspepsias of cardiac origin (due mainly to the anæmic and circulatory troubles); (4) dyspepsias of genito-urinary origin; (5) dyspepsias due to diseases of the nervous system (gastric crises of tabes, dyspepsia accompanying neurasthenia, &c.); (6) dyspepsias due to anæmia (the primary anæmias are doubtless sometimes the consequences of a pre-existing dyspepsia, but they may appear first and be the cause of the digestive troubles, and the proper treatment of the chlorosis or other anæmia may cure the dyspepsia); (7) dyspepsias due to tuberculosis, cancer, gout and rheumatism.

Robin insists on the absurdity of establishing fixed rules of treatment of dyspepsia when the causes are so numerous. The dyspepsia caused by tuberculosis or by gout is not to be treated simply as dyspepsia, but as an epiphenomenon of the underlying dyscrasia. On the other hand, if we have to do with an alcoholic dyspeptic, it will not be enough simply to suppress the alcohol in order to make the stomach well, for material lesions exist which will long survive the alcoholism.

The labours of our predecessors to institute a rational classification and treatment of dyspepsia have resulted in little but a chaotic array of symptom-treatments, for the most part useless and dangerous, as is all medication that is exclusively symptomatic. An illustration of this is seen in the vogue which internal antisepsis has had, as promulgated by Bouchard for gastric fermentation; this mode of treatment, according to Bardet and others, has not been a brilliant success. The same may be said of the administration of large doses of sodium bicarbonate in acute attacks of "hyperasthenic dyspepsia with hyperchlorhydria"; the utility of this treatment, says Robin, can no longer be defended.

The chemical school has studied the gastric juice and made classifications according to its richness in HCl. They have

given us hyperchlorhydria, and hypochlorhydria and anachlorhydria, besides another group of dyspepsias from acids of fermentation (lactic, butyric, &c.). As for the pepsin they have made little account of it, not knowing what *rôle* to assign to it in the troubles of secretion. To the chemical dyspepsias they have added the anatomical dyspepsias of nervous or muscular origin (moto or nervous types, and nervo-motor types). This is a notion as vague as the preceding, for in every malady of the stomach the secretion is influenced not only by the nervous system, but also by the state of the muscular coats of the organ, just as the nerves and muscles of the stomach are influenced by the state of the digestion. It is, then, utterly impossible to consider apart the *rôle* of the nerves and that of chemism, for both compose a solidarity.

M. Hayem in his first studies on stomachal chemism endeavoured on this basis to effect a classification of the dyspepsias, and he established a certain number of forms of chemical dyspepsia. More recently he has given a new classification, taking pathological anatomy as his basis, and constructing dyspepsia on gastritis, the former being the clinical expression of the latter; in other words it is a return to the doctrine of Broussais. This doctrine will never commend itself to clinicians; it is one-sided and partial. Robin gives the more rational conception in insisting that "the lesion is always consecutive to the dyspeptic troubles; in the onset these manifest themselves in a stomach physiologically sound. Every dyspepsia, then starts in a functional disorder. With the progress of the disease the multiple functions of the organ more and more undergo alteration; the chemical reactions, the derangements of secretion, of movement, and of innervation of the stomach are aggravated and inextricably interblended; at length the overjaded organ refuses service and there is gastritis.

Consequently, the therapeutist will find his best guide in the functional disturbance which exists, and which he may be called upon to treat before any visible lesion exists. He will always take due account of the chemical reactions and quality of the gastric juice, for thereby data are obtained which furnish useful indications as to the state of the gastric function; data which alone are useless for purposes of classification. In short, for the therapeutist, the only useful classification is the physiological. From this point of view, the stomach is anatomically and physiologically a solidarity, and when we study the functional reactions, we see that the dyspepsias manifest themselves under three characteristic types:—(1) Exaggeration of function; (2) insufficiency of function; (3) perversion of function. It is mainly under these three heads that Robin treats of the therapeutics of the dyspepsias.

52.—GASTRIC, INTESTINAL, AND RECTAL HEMORRHAGE.

By Dr. MANLEY.

[The following abstract, with some omissions, is taken from the *Medical Record*, August 29, 1896:]

Dr. Manley (*Therapeutic Gazette*) says that while bleeding through the anus is in a general way not to be viewed with the same alarm as that coming from the lungs or stomach, when the hemorrhage is considerable in quantity or persistent it should not be viewed with indifference. The effects upon the stomach are quite invariably emetic; upon the bowels, purgative. Pathological lesions which open the way for gastric hemorrhage are simple ulceration, tuberculosis, or cancer. It is a common clinical observation that large gastric hemorrhage is common among females at puberty and the menopause, and is rarely fatal. *Per contra*, such hemorrhage is extremely rare and also of very serious import in a male, excepting that type of hæmoptysis so general among hard drinkers. In the case of a female, preceding these large hemorrhages there is usually a period of indigestion, anæmia, and loss of strength. Recovery seems to be complete. Malignant disease of the stomach is rarely attended by large bleeding. In young men of good habits, sudden or repeated gastric hemorrhage is a most suggestive sign of sarcoma. In the incipient stage of this disease the most pronounced symptom is a severe anæmia with rapid wasting of flesh. It is only when the disease advances upward and reaches the peritoneum that suffering begins. Hence it is that cancer of the viscera becomes recognisable only when it has advanced so far that relief by operation is out of the question. Sarcoma of the stomach is widespread, and is unlike malignant epithelial infiltration (which primarily almost invariably attacks the pylorus); bleeding from the intestine—as in the course of typhoid—is manifest only when evidence of mortal exsanguination, or a state close to it, is apparent; deep shock, collapse, and syncope, all appear in rapid succession. Tuberculous ulceration, though common enough, rarely gives rise to hemorrhage. Malignant disease of the small intestine is rare as a primary infection. Hemorrhage, except at the rectal terminus of the large intestine, is uncommon, if we exclude dysenteric ulceration. As a symptom of surgical lesion it is found in cases of invagination in young children. Any type of ulceration may give rise to bleeding, though this part of the alimentary canal, being devoid of lacteals or peptic glands, is the least vascular.

Traumatic hemorrhage of the colon is extremely rare. When it occurs the blood is ejected in considerable amount undigested and imperfectly coagulated. The colon is so placed that it is well protected against the effect of traumatism. Rectal and anal hemorrhages usually occur from areas close to the verge. By digital examination it is possible to reach into the rectum as far as the insertion of the peritoneal coating or the beginning of the sigmoid flexure. This marks the utmost limit of direct surgical manipulation. Among predisposing causes of anal and rectal hemorrhage are :—The mechanical impediment to circulation peculiar to this situation, the almost vertical direction of the efferent vessels in the standing position, the absence of valves, and the irregular habits of life among human beings—for it does not appear that rectal disease is anything other than very rare in the lower animals. The most common cause is a hemorrhoidal or varicose state of the vessels about the anal verge. Tuberculous, next to simple, ulceration of hemorrhoidal walls is the most prolific cause of exhausting hemorrhage from the anus. Cancer ranks third in frequency. Cancer of the rectum, like the visceral type elsewhere, is not very painful in the beginning, and, with unusual exceptions, large or frequent hemorrhage is not present even when the disease is making most rapid headway and is spreading into contiguous parts. The immediate cause of hemorrhage from the anus is through straining at stool, when a thin-walled, widely distended-tumour ruptures. Arterial papillomata of the rectum are not uncommon causes of most exhausting depletions. In these cases the mucous membrane of the rectum investing the external sphincter is studded with minute raspberry papillæ, which are apparently devoid of an epithelial investment and bleed on the least irritation. Severe operative bleeding from the rectum is a most serious complication in those whose general health is enfeebled, who have become anæmic, or who have been exsanguinated by previous vascular drains. Symptomatic hemorrhage from the rectum in persons of full habits must not be confounded with the presence of local lesions. It is nature's way of seeking an outlet for over-distended vessels, and may be avoided by the use of purgative medicine and care in regard to diet Hemorrhage from tuberculous ulceration is sometimes very profuse. These ulcers usually lie in the posterior wall of the gut. Cancer of the rectum, at least in the early stages, is seldom attended with bleeding. In all these cases pain is a prominent symptom during the act of defecation, but hemorrhage is seldom seen. Gummatous masses usually infiltrate the non-vascular stratum of lymphoid tissue, which near the outlet of the rectum is of unusual thickness. The hyperplasia which they cause may produce stenosis, but rarely

ulceration or hemorrhage. Hemorrhage succeeding tuberculous ulceration of the rectum should be treated by local applications and attention to the general health.

The author concludes:—Hemorrhage from the rectum may be symptomatic of constitutional or organic disease, as plethora or hepatic congestion. In consequence of a lesion of some part of the digestive tube, anywhere from the flexure to the cardiac end of the stomach, blood may escape, changed or unchanged, through the rectum. The local lesions, in their order of frequency as a source of hemorrhage in the anorectal outlet of the intestine, are:—(1) Hemorrhoids; (2) simple or tuberculous ulceration; (3) malignant disease. Treatment includes constitutional and local measures. Hemorrhage from simple, tuberculous, cancerous, dysenteric, or typhoidal ulceration in any part of the digestive tube above the rectum, is quite beyond relief from direct surgical methods, and hence its treatment must, for the present at least, remain within the domain of medicine. Surgical treatment of hemorrhage of the rectal pouch and anus, when non-malignant, is generally practicable, safe, and permanent in results. In order, however, to be rendered effectual and definite, thorough dilatation of the anus and eversion of the rectum are imperative, that the bleeding points or source of hemorrhage may be brought under the immediate eye for direct and effective treatment. When bleeding succeeds hemorrhoids for the first time, or when its quantity is small, moderate catharsis with simple astringents in the form of suppositories will favour its arrest without recourse to radical or severe methods.

53.—THE MEDICAL TREATMENT OF MECHANICAL INSUFFIENCY OF THE STOMACH.

In the *Progrès médical* for April 25 M. Paul Cornet remarks that Boas considers the medical treatment to be purely symptomatic and the internal treatment generally palliative, and, on account of the difficulties it presents, it requires a great deal of caution in its employment. In cases of grave symptomatology, notably in those of acute pain and vomiting, the patient may be nourished exclusively by the rectum for one or two weeks if he is strong enough to bear the treatment. Rossler and Boas obtained excellent results with this method, particularly in two cases of gastric dilatation following ulcer.

In regard to a special diet, says M. Cornet, skim-milk is especially recommended, and its digestibility may be increased *by the* addition of a small quantity of brandy. Tea and coffee

may be given in small quantities, also beef tea and port wine. Mineral waters should be forbidden. When there is intense thirst small pieces of ice may be allowed, also iced milk, coffee, or tea. Eight grains of Dover's powder may also be prescribed. Nutritive enemata consisting of eggs, peptones, bouillon, and red wine have been recommended for gastric insufficiency of the first degree, and they may be administered two or three times a day. Smoked and salt meats are preferable to fresh and juicy meats, and fruits and vegetables which contain much water should be avoided. Bread should be eaten toasted. Butter and cocoa may be recommended in small quantities.

Lavage of the stomach is considered by M. Cornet to be a valuable aid, especially if there is excessive stagnation of the alimentary residue. This treatment is employed preferably in the morning, although where there are great pain and nausea it should be done at night, and in serious cases both night and morning. The more rapid the amelioration obtained by lavage, the more favourable will the prognosis of the disease be. This treatment gives satisfactory results, especially in cicatricial stenosis and in atonic dilatation. Electricity and massage are indicated, says M. Cornet, and hydrotherapy may also be favourably employed.

With regard to the medicinal treatment, he says, there are two things to be accomplished : (1) To excite the power of action ; (2) to diminish the process of fermentation. For the first, preparations containing strychnine, notably the extract of nux vomica, are indicated. The following prescription, says M. Cornet, is excellent :—℞ Codeine phosphate, extract of nux vomica, each 0·5 of a grain ; bismuth salicylate, 8 grains. M. Divide into twenty capsules, three of which are to be taken every day, one after each meal. Subcutaneous injections of strychnine salicylate may also be prescribed.

In order to combat the process of fermentation, says M. Cornet, Kuhn preferred salicylic acid, sodium salicylate, and sodium benzoate. Hydrochloric acid is useful in excessive butyric and lactic fermentation. Naunyn prescribed the following :— ℞ Carbolic acid, 38 grains ; powdered marshmallow, q. s. M. Divide into twenty-five pills, three of which may be taken every day.

Ewald recommends the following mixture :—℞ Resorcin, resublimed, 75 grains ; bismuth salicylate, powdered rhubarb, and sodium sulphate, each 150 grains ; sugar of milk, 225 grains. M. A pinch to be taken twice a day.

Resorcin is recommended also by Menche under the following form :—℞ Resorcin, resublimed, 30 grains ; tincture of rhubarb, 75 grains ; syrup, 300 grains ; distilled water, 5·5 ounces. M. The dose is a dessert-spoonful twice a day.

According to Boas, resorcin may be given as follows:—℞ Resorcin, resublimed, 30 grains; saturated chloroform water, 4·5 ounces. M. A dessert-spoonful is to be taken three times a day.

From three to five drops of chloroform with a little ice is also recommended, or menthol may be given in the following manner:—℞ Menthol, 15 grains; alcohol, syrup, each 300 grains. M. A teaspoonful of this mixture is to be taken every hour.

Loss of appetite may be combated with the fluid extract of condurango, pure or combined with fluid extract of calumba, or creosote, or the extract of nux vomica.

For insomnia due to other causes than pain, sulphonal, chloral hydrate, or chloral formamidate may be employed. The latter may be given as follows:—℞ Chloral formamidate, tincture of ginger, each 150 grains; distilled peppermint water, 5 ounces. M. The dose is a dessert-spoonful taken at night.

With regard to constipation, says M. Cornet, no laxative is required, simply enemata consisting of soap and water with castor oil or glycerine. In all cases drastics, and especially saline purgatives, should be avoided. Boas, he says, in cases where it is absolutely necessary to use medicaments, gives the fluid extract of cascara sagrada in doses of a teaspoonful three times a day.—*New York Medical Journal, May* 23, 1896.

54.—THE BACTERIOLOGY OF INFANTILE DIARRHŒA.

By Allan Macfadyen, M.D., B.Sc., Lecturer on Bacteriology, British Institute of Preventive Medicine.

It is the bacteriology of the small intestine which has the greatest practical importance in health and disease; and its study likewise presents the greatest difficulty, inasmuch as this portion of the gut is cut off from direct observation during life.

In the large intestine putrefactive decompositions take the upper hand, and the living factors at work in the small intestine become therefore obscured and difficult to identify. The variety of forms present in the dejecta renders the determination of the presence of specific microbes a task of peculiar difficulty, especially where we have to deal with a morbid condition in which diarrhœa and more or less marked constitutional symptoms are the main features.

These facts help to explain the absence of positive data regarding the etiology of infantile diarrhœa, though everything *points to* a bacterial origin of this complaint. There are three

factors to be considered:—(1) The bacteria present in health and in the course of the disease; (2) the easily decomposed food —milk; (3) the susceptible organism of the child, predisposing to such complaints.

Escherich found that in the milk fæces two organisms predominated, viz., the bacterium coli commune and the bacterium lactis ærogenes. They especially attack the milk sugar, and the chief products of their action are acetic and lactic acid, and CO_2 and H. gas. The process is a fermentative and not a putrefactive one. The results agree with what we know of the action of bacteria in the adult's small intestine. The investigations of Macfadyen, Nencki, and Sieber show that the bacteria of the small intestine primarily decompose carbohydrates, with the result that the contents of the small intestine have an acid reaction. This acidity will be a main factor in preventing the development of a putrefactive decomposition under normal conditions.

Escherich did not find in cases of infantile diarrhœa any organisms that might be called specific. He supposes that in the upper intestine a main factor in the causation of diarrhœa is abnormal acid formation by bacteria, and that in the lower intestine the decomposition is of proteid matter.

The action of the bacteria does not take place through a direct invasion of the organism, but through the absorption of poisons formed by them. It is probably through their action on the milk and not on the body that the bacteria acquire their dangerous properties. In the child toxic effects may result from substances that produce little or no effect on the adult.

Baginsky examined 43 cases of summer diarrhœa, but did not find any organisms of a specific character. The general conclusion he comes to is that several kinds of saprophytic bacteria may produce the disease under favourable conditions. The severe cases of diarrhœa seem to be due to poisons developed by bacteria from the proteid constituents of the food. Booker isolated altogether 33 forms of bacteria from cases of infantile diarrhœa. There was great variety, but no constancy in the types found.

Jeffries and Baginsky were not able to confirm Lesage's statement that the green diarrhœa of children is associated with the presence of a specific organism. The determining factor is the milk and the decomposition products arising from it. The researches of Vaughan in this connection are of first-rate importance, and deserve careful consideration and confirmation. Vaughan has isolated from poisonous milk a crystalline body, called by him tyrotoxicon. The symptoms of tyrotoxicon poisoning resemble those of cholera infantum. Vaughan also obtained toxic bodies from cultures of Booker's bacteria, which

produced vomiting, purging, and sometimes death in dogs. This observer believes that there are many bacteria which may produce diarrhœa in children by an action on the milk inside or outside the body.

There can be little doubt that in hot weather the milk undergoes a profounder decomposition than the ordinary lactic acid fermentation, by which its proteid constituents are attacked. These changes are due to bacteria, and may occur without visible alteration in the appearance of the milk. The milk, therefore, furnishes a more fruitful field for investigation than the intestine. If the living agents at work in the milk were accurately known, we would be in a position to determine the best methods for their extinction, and in such diseases it is their prevention that should be the main object of our investigation. Flügge emphasises the fact that milk sterilised by the usual methods is not without danger. A number of resistant forms are not destroyed, and three were found to produce a profuse and sometimes fatal diarrhœa in young dogs.

Though our knowledge is imperfect regarding the specific agents at work, everything points to this disease being due to changes produced by bacteria in the milk. It remains for future research to determine more accurately the nature of the toxic products, and of the bacteria that produce them.—*British Medical Journal, September* 12, 1896.

55.—APPENDICITIS AS IT AFFECTS LIFE INSURANCE RISKS.

By Albert Woods, M.D., Worcester, Mass., Medical Director of the State Mutual Life Insurance Company.

[The following occurs at the end of Dr. Wood's paper. The suggestion certainly occurs to one in reading them that appendicitis is not only a more frequent but also a more serious disease in America than in England.—E.F.T.]

The following classification will probably include all of the different phases of the disease which we shall be called upon to decide as affecting life insurance risks :—

(1) Cases of primary attacks of non-suppurative appendicitis, in which the appendix was not removed. In this class of risks the dangers to be guarded against are the return of the disease with its possibilities, and the development of some of its remote after-effects. The statistics show that the second attack occurred before one year in 82 per cent. of the cases, before two

years in 91·1 per cent., before three years in 94·4 per cent., before four years in 94·9 per cent., before five years in 96·5 per cent., and after five years in 3·3 per cent.

Those surgeons who could not report their cases showing the exact time at which the second attack took place, but did give their impressions from the study of several hundred cases, used expressions on this point as follows :—"We should say usually, if the patient relapsed, he did so within a year. In cases which have gone over two or three years, we should say we have almost never seen a relapse." They also expressed the opinion that if a patient went one year without any of the remote after-effects of the disease developing, the probability is quite small that they will appear later. Now if the second attack takes place within two years in 91·1 per cent. of all the cases, there is less than one out of ten chances that the disease will return after two years. I have not been able to collect any reliable data showing the death-rate in those cases which relapsed after two years. It certainly must be quite low. This statement is confirmed by several surgeons. It would seem reasonably safe, therefore, to accept this class of risks after two years.

(2) Primary non-suppurative cases with the appendix excised. In this class the recurrence of the disease is not to be expected, but the other remote after effects are to be apprehended. It has been shown that the adhesions disappear in many instances after ablation of the appendix, consequently obstruction would not be so likely to occur as in the first class. Cases of this kind should be insurable after one year.

(3) Suppurative cases in which the appendix has been extirpated, or in which it can be clearly proven that it has sloughed entirely away. It may be very difficult to decide the latter point absolutely in some of the cases. The remote consequences from adhesions to be anticipated in this variety would be the same as those in class 2, and I can see no reason why the same rule should not be adopted for both classes.

(4) Suppurative cases in which the abscess was opened and drained, the appendix not being removed. From the data obtained, it appears that in this type of the disease a recurrence was observed in less than 1 out of 20 cases; and with only two exceptions the second attack occurred within two years, and mostly within a few months after the previous one. While all of the authorities state that there is a possibility that any subsequent attack may be followed by serious consequences, still several surgeons who have had large experience with appendicitis inform me that, as a matter of fact, death is very rare after these relapses. It would seem, therefore, that the risk of a fatal issue in any case after two years would be slight.

Cases of this kind might be accepted for insurance after two years. In those cases in which the abscess ruptures internally, each one must be judged upon its merits. Many of these cases make a perfect and permanent recovery, and are justly entitled to insurance.

(5) Chronic relapsing and recurring cases. An applicant with a history of chronic relapsing appendicitis would be debarred from insurance, because he does not make a full recovery between the attacks. When it can be decided that in all probability the appendix has become obliterated, then he should be insurable. He should be required to wait three years after the last attack before he should be considered eligible. I find it very difficult to arrive at any just conclusion in regard to those cases in which the recurrence has been at irregular intervals, the patient having been in perfect health and free from any symptoms of the disease between the attacks. It has been stated that the patient appears to have some predisposition to the disease, and that the attacks are excited by errors in diet, over-exertion, &c., or there is an underlying rheumatic or gouty tendency, as when the ailment has occurred in more than one member of the same family. This type, as a rule, is not liable to pass suddenly into the grave forms of the disorder. If a person gives a history of two or more attacks, at periods of less than five years apart, he should be declined; but when he has gone over five years without a recurrence, it is a question in my mind whether we should be assuming any more risk in accepting such a case than we take every day in some other diseases. Each case, however, must be judged according to the facts submitted. The age of the applicant would be an important factor in enabling us to form a decision.

(6) Cases which have recovered from general peritonitis, either with or without an operation, the appendix having been excised or not. It is generally thought that very few patients survive such an attack, but recovery does occur; and under modern treatment the number which gets well is increasing. Are the remote consequences of adhesions more likely to develop after a general than after a local peritonitis? Upon the answer to this question we should base our decision as to the eligibility of this class of risks. The replies received from the majority of those surgeons to whom this question was addressed, indicate that there is no difference in the liability between the two forms of peritonitis. Whether there is greater danger of the development of some of the other remote after-effects, as abdominal tuberculosis, after a general than after a local peritonitis, I have no means of knowing. With the appendix unremoved, second attacks of peritonitis have been observed. Richardson reports a fatal case which occurred three

years after the first peritonitis. I can see no good reason why the same rules should not govern this class as those given for classes 1 and 2, excepting that a patient who has had a severe attack of general peritonitis has a protracted convalescence as a rule, and therefore a longer time would be required to establish perfect health than after a milder form of the disease; and, besides, there may be a greater risk in this class of cases. Taking the above facts as a basis upon which to form an opinion, I should say that cases of this class were eligible for insurance after one year when the appendix has been excised, and after three years when it has not been removed.

(7) Cases of hernia following an operation. These should be classified with other kinds of hernia, though it has been said that strangulation is not so liable to occur in this type as in the other varieties. The applicant should be required to wear a suitable support.

The above recommendations seem to be justified by the facts obtained from studying the literature of appendicitis, and from the opinions expressed by those physicians and surgeons who have so kindly given me the benefit of their large experience with the disease.

The rule "to decline all applicants with a history of appendicitis, unless the appendix has been removed," is, in my judgment, too stringent; and, on the other hand, the rule to accept an applicant after six months with such a history, the appendix not having been excised, is too liberal, as it is assuming too great a risk, excepting perhaps in the very mildest cases of the disease.

While the former rule may more safely guard the company, so far as the death rate is concerned, it will at the same time deprive many persons of the benefits of insurance to which they are justly entitled; and, besides, it will turn away an amount of business which should be retained.—*Medical Record, August* 22, 1896.

56.—ON ENTEROPTOSIS.

By Max Einhorn, M.D., of New York.

[The following is taken from Dr. Max Einhorn's paper:]

The subjective symptoms of this disease are:—Weakness and constant feeling of lassitude; difficulty in digestion of fats, farinaceous foods, acids, pure wine, pure milk with an increase in the digestive troubles about three hours after meals; sleeplessness; usually constipation or irregularity of the bowels.

The objective symptoms, according to Glénard, are:—(1) Splashing sound (*clapotement épigastrique*); (2) pulsation of the abdominal aorta (*battement aortique*); (3) corde colique transverse; (4) in the right hypochondriac region, frequently movable kidney. By the "corde colique transverse," Glénard means that resistance, which is found lying over the aorta from three to five centimeters above the navel, running horizontally from six to ten centimeters on each side of the median line. This gives the impression of a sausage-like body, one centimeter in width, and was supposed by Glénard to be the displaced colon transversum, for pressure on the right iliac region at the beginning of the colon ascendens produced rumbling sounds in the corde transverse.

Glénard distinguishes three different periods of the disease. During the first period (atonie gastrique par entéroptose) the patient eats everything but experiences slight somnolence or a burning sensation after meals; about 2 o'clock a.m., the sleep is interrupted for a few minutes. Generally there is one evacuation of the bowels in the morning, of somewhat diarrhœic nature; there is a gradual loss of strength. In the second period (mésogastrique, gastroptose) the patient avoids fat, farinaceous foods, acids, milk, wine; complains of a sensation of dragging, false hunger, and emptiness about three hours after meals. About 2 o'clock a.m., he remains awake for two or three hours; suffers from constipation, interrupted once in a while by diarrhœic evacuations; always feels tired, particularly when arising, and about three o'clock in the afternoon. In the third period (neurasthénique, enterostenose) the patient has lost thirty or forty pounds, and is not sufficiently nourished; he has lived on milk diet, on purées, beef-tea—on most improbable meals; complains of a weighty sensation or cramps in the stomach, and is almost constantly suffering. He does not sleep; the constipation is most obstinate; the daily enemata with difficulty effect an evacuation of fatty scybala, surrounded by mucus or pseudo-membranes from time to time. There is constant complaint of great weakness, so that he hardly leaves the room, and lies on the lounge constantly. He represents the most varied nervous symptoms—cerebral, spinal, sympathetic, both psychical and physical.

As this whole series of symptoms is caused and explained (1) by enteroptosis, (2) enterostenosis, (3) deficient nutrition, the fundamental indications for the successful treatment are pointed out by Glénard in the following way:—(1) The intestines have to be raised and maintained in their position; (2) the abdominal tension must be increased; (3) the bowels have to be regulated; (4) the secretions of the digestive tract *and of* the annexed glands have to be stimulated; (5) the

alimentation has to be regulated and the digestion assisted; (6) the organism has to be stimulated. The first two points are accomplished by wearing an abdominal bandage reaching to the navel and exerting a pressure upon the hypogastrium from below upward. This bandage raises the intestines and increases the tension of the abdomen.

To regulate the bowels, Glénard gives his patients, a quarter of an hour before breakfast, any one of the following:—Natrium sulphate, 4·0, magnesia sulphate, 3·0, in half a glassful of water, or a teaspoonful or half a glass of Janos; one quarter of a glass of Rubinat; a teaspoonful of Carlsbad salt, or pills consisting of 0·05 extractum rhei. The fourth requirement must be accomplished by massage, electricity, and lavage of the stomach; and the sixth, by gymnastic exercises. Glénard first pointed out that the diet should contain plenty of meats, but not of milk, as was formerly customary; frequent meals should be advised, while the quantity of liquids should be greatly reduced.

As has been shown by Ewald, the best sign to recognise enteroptosis, is the demonstration of an existing gastroptosis. This can occasionally be recognised by the splashing sound, which can be produced on the left side of the abdomen over an area extending from the navel, or somewhat above it, down to the symphysis. The inflation of air is another means of detecting the position of the stomach; when the stomach is inflated, the lesser curvature, in cases of gastroptosis, is visible midway between the ensiform process and the navel, or just near the umbilicus.

Gastrodiaphany has been recommended by me as a reliable means of recognising gastroptosis. It makes the stomach visible as a red zone on the abdomen, between the navel and the symphysis.

While Israel is of the opinion that on a deep inspiration even a normal kidney may be partly felt by this method of examination, Glénard considers all cases in which the kidney can be detected by palpation as abnormal. He distinguishes four degrees of movable kidney:—First degree of nephroptosis: the lower part of the kidney can be palpated during deep inspiration; during expiration, the kidney slips back to its normal place, and it is impossible to prevent its return. Second degree: the greater part of the kidney can be palpated, and it can also be held in its abnormal position, but its superior margin cannot be felt. Third degree: the superior margin of the kidney can be reached on deep inspiration. Fourth degree: the whole kidney is accessible to palpation, even during expiration (the movable or wandering kidney of the writers). Movable kidney is, according to Glénard, only one of the symptoms of enteroptosis.

It is generally accepted that the corset plays a predominant part in the causation of the downward displacement of the abdominal organs; confinement is also believed to be a great factor. But besides these two points, which refer only to the female sex, there are some other conditions which, likewise, predispose to enteroptosis and are common to both sexes, namely, acute diseases of a grave nature, and protracted ailments accompanied by a considerable loss of flesh.—*Medical News, September* 9, 1896.

57.—THE CIRRHOSES OF THE LIVER.

[The following is taken from an editorial in the *New York Medical Journal, July* 18, 1896:]

According to Charcot and Gombault there is the common cirrhosis of Laennec, with granulations and an atrophy, and due to a proliferation of connective tissue, starting from the portal vein and its branches. Then there is a cirrhosis associated with hypertrophy and jaundice, which starts essentially from the system of biliary ducts, and which is due to obstructions and inflammations in these organs. A third form of hypertrophied liver was noted, as occurring in persons suffering from hereditary syphilis. The distinction between the first two types of cirrhosis—that of portal origin and that of biliary origin—is still, according to Senator, to be maintained, and has been supported by the further and more elaborate researches of Ackerman and other pathologists. It has, however, been found that the precise course of these two types, as described by Charcot and Gombault, is not always observed and that mixed forms undoubtedly occur. In order to meet these clinical distinctions, Senator describes two varieties of the atrophic or granular form. One of them he calls portal cirrhosis with hypertrophy of the liver, the other cirrhosis with icterus. It had been noticed that cases of biliary cirrhosis were followed eventually by an atrophy; hence, Senator establishes a special class of this form of disorder, which he calls "biliary cirrhosis with secondary atrophy," and a variety of this he calls "biliary cirrhosis with hypertrophy of the spleen." The third and final type is called a "hypertrophic cirrhosis with icterus."

The atrophic cirrhosis of Laennec is characterised by an atrophy of the liver and enlargement of the spleen, absence of icterus, and absence of bilirubin in the urine; later by ascites and dilatation of the veins of the abdominal wall and of the gastro-intestinal tract. This is undoubtedly a common type of atrophy, and is associated usually with excessive indulgence in

alcoholic drinks. While some authors consider that in this disease the primary trouble is a degeneration and wasting of the liver cell, with secondary proliferation of connective tissue, it is generally taught that connective tissue, starting from the portal system, begins to grow first and that the cell atrophy follows it. The biliary cirrhosis with atrophy in its typical forms is due to obstruction of the biliary passages by the catarrhal products or by calculi. Here the leading symptoms are decolouration of fæcal matters, at first enlargement of the liver, followed by atrophy, without swelling of the spleen and without ascites. The urine contains bilirubin in abundance.

In the third form, that known as cirrhosis of Hanot or the hypertrophic cirrhosis with icterus, the liver is enlarged. The discolouration of fæcal matters is little marked aud variable. The urine, which is rather abundant, contains generally some bilirubin. The spleen is enlarged and there is here also no ascites nor portal stasis.

This last type of the disease is, according to Senator, very rare, and he admits to have seen only about a dozen cases. Men are more often affected than women, and the essential cause seems to be a catarrhal condition of the bile ducts. The distinctive features are the large liver and the hypertrophied spleen, the enlargement of the liver occurring quite early. This form of cirrhosis is more benign than the portal type and runs a variable course, during which the patient gets now better, now worse. It lasts sometimes ten or a dozen years. A cure is not impossible in these cases and death, when it does result, is due to marasmus and profuse hemorrhage, or, perhaps, to a peritonitis. As regards prognosis and therapeutics, Senator has little to add to what is already known. The prognosis is bad in all the forms, except, perhaps, in that due to the presence of calculi or other movable obstructions to the biliary duct. In general, the prognosis is bad in accordance with the smallness of the size of the liver, and cases of hypertrophied liver are more favourable than those in which it is of normal volume.

The portal cirrhosis of Laennec, though incurable, can be very much ameliorated by treatment. Alcoholic drinks must be forbidden, and a non-irritating diet, composed largely of milk, must be prescribed. Milk and iodide of potassium, though they seem to be borne by Frenchmen and Italians, agree less with the German constitution; at least, Senator states that, according to his experience, few Germans can habituate themselves to a milk diet for more than a few weeks. It is necessary in their cases to add something else. Senator is a little sceptical as to the value of iodide of potassium in cases in which there has been no syphilis. He considers it important to puncture the abdomen and relieve the ascites as early as

possible, and he finds that the use of calomel and digitalis is helpful. In the biliary types of cirrhosis he uses injections containing a litre of oil and a little soap and water, or solutions of salicylate of sodium, 1 to 1,000, all combined with careful massage of the liver, and from time to time laxatives, especially those known as cholagogues. Prolonged baths, with massage during the bath, and the cures that one gets at such places as Carlsbad, exercise a favourable influence upon the excretion of the bile.

58.—ACUTE PANCREATITIS.

By W. Cayley, M.D., F.R.C.P., Physician to the Middlesex Hospital.

The following case is one of acute pancreatitis—a somewhat rare disease, though it probably occurs more frequently than is supposed, as, unless a post-mortem examination is made, it is liable to escape recognition and to be mistaken for perforative peritonitis or acute intestinal obstruction. [The case, occurring in a man aged 50, has to be omitted here owing to space.]

This case presents the typical characters of one form of acute pancreatitis—for a day or two epigastric pain and tenderness with constipation, then vomiting and the rapid supervention of fatal collapse, death usually occurring within four or five days from the commencement of the symptoms. In somewhat less acute cases peritonitis may occur, or suppuration in and around the pancreas, and the patient may survive for weeks or months, or even recover with evacuation of the pus. Sometimes the pancreas becomes gangrenous, and may even separate as a sequestrum and be discharged into the bowel.

In the rapidly fatal cases the appearances found on post-mortem examination resembles those met with here, except that, in addition to the inflammatory exudation around the pancreas, the fat necrosis, and the coagulation necrosis of the glandular structure, there is extensive hemorrhage in and around the pancreas. Hence, Dr. Fitz, who is the chief authority on this disease, distinguishes this as the hemorrhagic form from the suppurative and gangrenous forms. Here, however, there was no hemorrhage, which therefore must not be regarded as an essential element in the disease.

The relation of the hemorrhage, the fat necrosis, and the inflammation to one another, has been differently interpreted by different observers.

We have next to consider the cause of this fatal collapse. *This* can hardly be due to any affection of the pancreas itself,

and must in all probability be ascribed to the surrounding inflammatory exudation compressing or interfering with the great retroperitoneal ganglia.

In its pathological characters the disease must be regarded as an acute infective inflammation, and it is probable, as Dr. Fitz supposes that the starting point is some inflammation of the stomach and duodenum, and the infecting agents obtain access to the pancreas through its duct.

With regard to the antecedents of the disease, it occurs most frequently in the male sex, and appears to be an affection of adult life, the ages of the patients varying from 20 to 60, and upwards. A large proportion have been very fat, and many had been previously subject to gastric affections. The majority appear to have been of temperate habits. In some cases the symptoms have followed an indigestible meal. Where the urine has been examined it has not been found to be saccharine, though gangrenous pancreatitis has occurred in diabetes. The so-called hemorrhagic form is usually fatal within five days; the suppurative and gangrenous forms may run a much more protracted course, but these forms are sometimes due to local causes or to injury.

The diagnosis presents great difficulties, and has seldom been made during life, though probably when the disease becomes better known, and physicians are on the look-out for such cases, the symptoms will be found to be sufficiently characteristic.

The affections with which it is most likely to be confounded are perforative peritonitis, especially of the stomach and duodenum, and acute obstruction of the bowel; sometimes irritant poisoning or gall stones may be suspected. In the present case the first two of these possibilities was carefully considered. Against perforation of the stomach or duodenum was the absence of any previous symptoms of gastric or duodenal ulceration. The fact that there was no general distension of the abdomen, and no signs of the presence of gas in the peritoneal cavity, and against perforation of the stomach, was the persistence of the vomiting. But above all, the characters of the collapse, commonly in perforation the initial collapse is succeeded for a time by a stage of reaction and fever due to the peritonitis which is set up, and the symptoms come on quite suddenly; here the symptoms were of gradual onset, and no signs of reaction appeared. If there had been perforation, it must have been into the lesser sac of the peritoneum or some other circumscribed space shut off from the general abdominal cavity. This would have been still less consistent with the profound and persistent collapse.

The second supposition was that the case was one of acute intestinal obstruction. Against this was the absence of any

swelling of the abdomen and of regurgitant vomiting of intestinal contents; though the patient vomited frequently the vomit was small in quantity, and consisted only of stomach contents, being chiefly milk; not even bile was ejected. This seemed inconsistent with intestinal obstruction, however high up it might be. Moreover, there was no positive evidence of intestinal obstruction. The patient said he had been constipated for three or four days, but the bowels acted with an enema and afterwards spontaneously. Nothing, too, but an acute strangulation could have caused such intense collapse, but the onset, which was somewhat gradual, was quite unlike this.

I think, therefore, in this case a diagnosis was by no means impossible. Fortunately the collapsed condition of the patient saved him from fruitless laparotomy, which has been done in several similar cases.

One sign which is sometimes present could not be detected—namely, fulness or swelling in the epigastric region; but our patient had his abdominal wall and mesentery so loaded with fat that the retroperitoneal bulging could not have been felt.

The characteristic symptoms, then, of the disease are these—epigastric pain and tenderness, which may as in this case be be at first only of moderate intensity, and resemble the pain of gastric catarrh, but may be very severe from the outset; then vomiting, but the vomit does not present the characters of the regurgitant vomiting of intestinal obstruction. There is usually constipation, but sometimes diarrhœa; there may be fulness or swelling in the epigastrium, but no general distension or any signs of the presence of gas in the abdominal cavity. The tenderness is mostly limited to the epigastric region. Fever is inconstant, and with the collapse the temperature falls. The fatal collapse may set in as early as the second day, more commonly on the third or fourth.

The last point to be considered is the treatment, about which there is little to be said. We have no means of controlling an acute internal infective inflammation; we can only aim at counteracting the effects and obviating the tendency to death.

The fatal collapse in these cases is probably to be attributed to interference with the functions of the great sympathetic ganglia and consequent vasomotor paralysis of the mesenteric vessels and the draining into them of a large part of the blood, together with cardiac inhibition, and the only chance would be to tide the patient over this dangerous period and give time for the inflammation to subside or become limited; in the suppurative or even the gangrenous form this appears to take place. We must then use those means which are usually employed to combat collapse, alcoholic stimulants administered by the *mouth* or rectum, hypodermic injections of ether and strychnine,

morphine to relieve pain; we might perhaps with advantage have recourse to those other remedies which recent experiments have shown to have the power of controlling the vasomotor paralysis and of stimulating the heart. Of these, according to Dr. George Oliver, suprarenal extract is the most powerful. Pressure on the abdomen is also an effective agent, and perhaps, if applied gently and uniformly by a suitable binder might be borne by the patient. At all events we must endeavour to make an accurate diagnosis, and so avoid the risk of hastening the fatal event by useless laparotomy.—*British Medical Journal*, *July* 4, 1896.

DISEASES OF THE URINARY ORGANS.

59.—NEPHRITIS IN CHILDREN.

By Henry E. Tuley, A.B., M.D., of Louisville, Ky.,
Clinical Assistant to the Chair of Practice
and Instructor in Physical Diagnosis in the Kentucky School of Medicine, &c.

[The following is taken from Dr. Tuley's paper:]

A nephritis may be primary or secondary, the former occurring infrequently. It, however, does occur, though denied by some authors. It may be secondary to any of the exanthemata, perhaps more frequently as a sequel to scarlet fever, rheumatism, erysipelas, acute and chronic intestinal diseases, vaccination and pneumonia, the active causative agent in these diseases being either of primary bacterial origin, or the result of the elimination of their toxins by the kidneys.

The lesions of a nephritis may be classed as a "descending nephritis," the essential change being glomerular and epithelial, due to chemical, bacterial, or toxic agents. The other form may be called the "ascending" variety, due to invasion from the urinary organs below. This affects first the papillæ, and, by means of the lymphatics, the parenchyma is invaded, the change being toward the cortex.

In the interstitial form there is an accumulation of cells between the tubules; the kidney is large, moist, whitish, and opaque. Clinically, this form is a result of the exanthemata, and may give rise to few symptoms. The glomerular form is much more frequently found as a result of scarlet fever than the former. The lesion is chiefly a proliferation of the capsular epithelium, with hyperplasia of the connective tissue. This

form is well called capsular glomerulo-nephritis. Councilman states that the acquired or primary form of nephritis differs but little from that in the adult, though children are less prone to the circulatory disturbances found, especially in the chronic form, in the adult. In the text-book by Ashby and Wright it is stated that the lesion in acute nephritis of childhood is of the croupous pneumonia type; the blood-vessels are engorged, choking of the tubules results, and there occurs an exudate of the liquor sanguinis and blood-corpuscles. The inflammatory changes, failing to be relieved, secondary changes occur, the most important being a glomerular and peri-glomerular nephritis.

A very valuable contribution to the etiology of this disease has recently been published by Dr. A. Jacobi, in which many valuable suggestions are made as to the causation of this ordinarily unlooked-for disease of the newborn.

In no disease of childhood are the symptoms so varied as in nephritis. They may be so trivial as to pass unnoticed, especially when there is neglect in the examination of the urine. In well-marked cases the symptoms are pronounced and aggressive; the younger the patient, the more prominently the symptoms may point to the brain, or perhaps to the gastro-intestinal tract, or to the lungs, thus obscuring the diagnosis of the true nature of the disease.

The onset generally is sudden, preceded by a chill and a rise of temperature to 102 or 103°; the pulse is very rapid, as a rule, and the tension is high. Convulsions may precede active symptoms or perhaps supervene later. Œdema occurs early, and its presence should at once excite suspicion; at first the dorsum of the feet, the ankles, and legs are affected, then the face, general anarsarca occurring in some cases. Blindness may frequently be seen, due to a retinitis, either simple, hemorrhagic, or colloid. Fox writes that in the hemorrhagic and colloid varieties of retinitis albumin is not found in the urine; this is especially so of the hemorrhagic variety, which is considered a forerunner of a non-albuminuric Bright's disease. The urine is scanty and high-coloured, though there may be suppression, but catheterisation will generally obtain enough urine for an examination.

Albumin in large quantities is usually found; microscopic examination shows granular, epithelial, and blood-casts, and blood-cells. Anæmia is prominent; the skin, which is of a peculiar, waxy look, is dry and hot. Cough is not an infrequent symptom, and may be distressing if pulmonary œdema develops to any extent. Pain, heaviness, or a sense of discomfort in the back may be complained of by older children. Headache is also prominent. Restlessness and disturbed sleep,

involuntary cries, convulsions, and even coma are not uncommon symptoms; strabismus and dilated pupils are found frequently.

Of all the diseases of childhood nephritis demands the most prompt, vigorous, intelligent, and careful treatment. Three essential rules in the treatment must be recognised, viz.:—(*a*) Relieve the kidneys of the extra work of carrying the transuded serum from the tissues, as well as the retained products of tissue metamorphosis usually excreted by the kidney and retained because of their damaged state; (*b*) endeavour, by intelligent medication and diet, to prevent further damage to the diseased organs; (*c*) restore the kidney to its normal condition.

In meeting the first indication, resort must be had to the compensatory emunctories, the skin and the bowels, and at no age can we rely upon them more than during early life. Calomel is indispensable. It stimulates the liver to action, and by the increased flow of bile the contents of the bowel are rendered more fluid and the elements to be excreted more soluble in the blood, thus proving less irritating to the kidneys. The salines are of great service as hydragogues.

Hot-air baths must be relied upon for their diaphoretic action, as pilocarpin is very uncertain and not to be depended upon. The best method of applying heat is by using an apparatus which will supply hot air under the bedclothes. This can be used continuously, as it does not cause prostration. Liquid ammonia acetatis is an efficient remedy in the stage of convalescence, acting beneficially upon the kidneys and the skin. The high tension in the arteries can be combated more efficiently by blood-letting than otherwise, its beneficial effect being seen upon the pulse, the nervous system, and the kidneys by lowering the blood-pressure.

A very valuable agent is water, given, perhaps, plain after filtration or boiling, as young children take carbonated waters with reluctance. Given *ad libitum* and at regular intervals, if the patient does not call for it, it acts as a diuretic, without causing any irritation. If refused by the mouth, it acts well as enema if large doses are given

The following points are of interest:—Pilocarpin muriate, a perfectly fresh preparation, to the total dose of one-quarter of a grain, did not have the slightest effect upon a child's skin or salivary glands, and did cause some depression of the circulation. Hot air had little effect in inducing elimination by the skin until it had been kept up for at least twenty-four hours. Calomel proved an efficient aid in elimination by the bowel, with the aid of Rochelle salts, which were borne by the stomach better than the calomel. Blood-letting was of the greatest benefit, not only upon the heart, reducing it from 160 to 104,

and lessening the blood-pressure; also ridding the blood of a quantity of toxins at once. This is a remedy that should not be forgotten.

The case of a child aged 11 illustrates the remarkable recuperative power of the child, not only in surviving such overwhelming poisoning of the system, but the kidneys regaining their former integrity.—*Medical News, August* 8, 1896.

60.—PILOCARPINE IN BRIGHT'S DISEASE.

[The following is taken from a discussion before the New York Medical Association, and reported in the *Medical Record*, June 13, 1896:]

Dr. Charles J. Proben read a paper on his experience with pilocarpine in the treatment of uræmia. In the first part of his paper he briefly considered the physiological action of pilocarpine and pointed out the antagonism between it and atropine. The inconvenience in the use of other measures to excite the skin and kidneys to action in uræmia and eclampsia, and the slowness of their action, he said, have led to a trial of pilocarpine by Barker, Saenger, and many others, in spite of the dangers from depressing effects. Barker considers the use of pilocarpine in eclampsia contraindicated; Saenger reports three cases with one recovery; Loomis thinks the drug can be tried cautiously in uræmia of Bright's disease under certain conditions. Briefly stated, the author thinks it is not safe when there is fatty degeneration of the heart, dilatation, senile change of arteries, cardiac inefficiency; in fact, probably its only indication in uræmia is when there is simple hypertrophy of the heart with strong action. Here its beneficial effects are said to be striking. Moreover, the modern way of directly attacking the blood is a far more efficient method of treating uræmia. By some, this is carried out by withdrawing a portion of the venous blood, even to the extent of a thousand grams, and replacing it with saline solution. The proportion of poisonous elements withdrawn from the circulation in this manner is far greater than it would be in withdrawing an equal amount of sweat or urine. Dr. Proben thinks it is seldom necessary to make venesection, it being sufficient to use rectal injections or venous transfusion of saline solution. He outlined the histories of three or more cases illustrating adverse results from the use of pilocarpine in his early experience. Each of the three patients had uræmic toxæmia from chronic Bright's disease, and as other measures had failed, he tried injection of *one-fifth* of a grain of pilocarpine, and in all the same result

was soon noticed. The drug exerted all of its influence upon the heart muscle, producing tumultuous action, venous stagnation, collapse, œdema, clammy sweat. Death soon followed. In one instance atropine was used to neutralise the effect of the pilocarpine, but without avail. He also recalled that, when interne in a city hospital, pilocarpine was sometimes used and caused cardiac failure. It is established that pilocarpine is a marked cardiac depressant, dangerous to use in uræmia, and its use should be restricted to other conditions than Bright's disease. The author related a case of eclampsia before and after delivery, with almost complete suppression of urine with one hundred per cent. albumin. He injected two quarts of saline solution into the vein of the arm, with the result that in twenty-four hours the woman passed one hundred and nine ounces of urine. There is no means more effectual for stimulating kidney secretion.

Dr. J. L. Lewis Smith opened the discussion on pilocarpine in scarlatinal nephritis. His attention was first called to pilocarpine many years ago by the remark of a gentleman, distinguished in the profession, that he would never use it again because it was likely to produce fatal bronchorrhœa. Soon after this, Dr. Smith was called to see a child in consultation by a physician who had given it one dose of pilocarpine for transudation of serum following scarlatina. The child was breathing with the utmost dyspnœa, the chest was full of very coarse râles, a condition which might be called bronchorrhœa, evidently due to the pilocarpine. The child died. Although pilocarpine is efficacious beyond all other remedies in producing urination and perspiration, yet Dr. Smith has not used it in hospital pauper adults, with anæmia attending their dropsical accumulations in Bright's disease, lest its depressing effects should prove fatal. His record books, however, contain the histories of two children with dropsical accumulations depending on scarlatinal Bright's disease in which pilocarpine given internally in doses of one-thirty-second of a grain has been efficacious in saving life, and this experience inspired the hope that a way may be found of using it, say in small doses or guarded by some other drug, by which its beneficial effects can be secured without its dangerously depressing effects.

Dr. J. Blake White said his experience with pilocarpine has been more favourable than Dr. Proben's. He employs it in smaller doses, and usually in connection with some cardiac stimulant, as strychnine or digitalis. To a child he gives not more than one-thirty-second of a grain, to an adult one-twelfth to one-sixth of a grain by the stomach, never more than one-sixth hypodermatically. He doubts whether the pulmonary and cerebral œdema in the cases of Barker and Saenger were

due to the pilocarpine, as they are apt to occur in the usual course of the disease. Children are especially tolerant of pilocarpine. Careful examination should be made of the circulatory system in order to exclude heart disease, &c.

In some closing remarks, Dr. Proben said that while œdema is a frequent cause of death in Bright's disease, yet as it comes on so rapidly after administering the pilocarpine, he must attribute it to the action of this drug. Authorities are agreed that it is best to administer the pilocarpine hypodermatically. The crystallised form alone is reliable. Jaborandi contains other alkaloids which are more or less antagonistic.

61.—THE DIFFERENTIAL DIAGNOSIS OF URÆMIA AND MENINGITIS.

By Arthur R. Edwards, A.M., M.D.,
Professor of Therapeutics in the North-Western University Medical School, Chicago, &c.

[We have been obliged to omit some of the numerous references and other parts of Dr. Edwards' exhaustive paper. The reports of three obscure cases have also been left out.]

Uræmia is usually readily differentiated from organic cerebral disease, yet confusion may occur in atypical cases. Leube's chief rule in the diagnosis of uræmia is formulated as follows:—In patients with nephritis uræmic intoxication is to be assumed as the cause for nervous symptoms only when other causes can be excluded. This method of diagnosis by exclusion has served Leube well, and he considers the method important, since, in the course of renal disease, occasional organic nervous lesions, such as hemorrhage and meningitis, may simulate uræmia. The clinical diagnosis in such cases is often made only with a certain degree of probability.

Pre-eminent importance attaches to the presence of albumin and casts, and to the amount of urine. With typical nephritic findings in the urine the diagnosis of uræmia is usually easy. Exceptions exist in that nephritis may be unattended by albuminuria, casts may be permanently absent, and uræmia may intervene when the amount of urine and urea is normal. When conspicuous cardio-vascular symptoms attend nephritis they become valuable diagnostic adjuvants, worthy of considerable, but not implicit, confidence. Cardiac hypertrophy predisposes to apoplexy, hemorrhages, and inflammations in various viscera, especially in the retina. Cortical irritation increases arterial tension. Moderate arterial tension increases *the cardiac* force, while excessive tension decreases it. Redundant

toxins paralyse the vasomotor system, and the heart's strength flags by the absence of that difference in arterial tension imperative for the maintenance of the circulation, hence the multiplicity of cardiac conditions conceivable in uræmia. The pulse is slow, 40 to 60, before a uræmic attack, and later, after a convulsion, it is usually rapid. Early in meningitis the pulse is slow; later it is frequent.

Most important are the ophthalmoscopic findings, for retinitis albuminurica is rarely absent in chronic nephritis, leading to uræmia (Leube), and in acute uræmia the abundant albumin, casts, and œdema are sufficiently suggestive. In meningitis the pupils are mostly narrow and in uræmia dilated, yet uræmic myosis is observed.

Uræmia and meningitis have many symptoms in common —delirium, headache, vertigo, coma, convulsions, irregular breathing, and vomiting. Confusion is especially probable when the convulsions are localised in a few muscles, in which partial contractures, focal paralyses, and temperature appear. In such combinations the most experienced diagnostician may err. Meningitis and uræmia may co-exist, yet meningitis is the least frequent of all the forms of serositis to which the uræmic patient is exposed. Broadly speaking, circumscript convulsions and paralyses speak strongly for anatomical changes in the central nervous system, especially when constant, although such alterations occur rarely in uræmia. In uræmia they are chiefly fugitive. Literally, I know of no focal nor general symptom or sign observed in meningitis which has not been recorded, singly or combined, in uræmia.

Stenhouse Kirkes drew attention to the fact that not all cerebral symptoms in nephritis are functional, but that some are of organic origin—*e.g.*, apoplexy. Thus uncomplicated asphasia was found due to hemorrhage in Broca's convolution. In meningitis the breathing is frequently sighing, irregular, and of the Cheyne-Stokes type. In uræmia, asthmatic attacks, angina pectoris vasomotoria, a laryngeal croup type, Cheyne-Stokes breathing, and cyanosis are recorded.

The subject of temperature in uræmia is a mooted point. Many maintain it is reduced. Lépine found that the temperature may rise without convulsions or inflammation. Unusually low temperature is found where vasomotor paralysis exists and effete products accumulate in the system. Strümpell observed not uncommonly a temperature rising to 39° C., irregular in type, rarely reaching 41·5°, and often associated with chills, vertigo, sweating, headache, and tinnitus aurium. Rosenstein expects low temperature only in subjects depleted by diarrhœa and vomiting. Others confirm Rosenstein's position, although most authorities oppose his views.

The most concise general statement regarding uræmic nervous phenomena asserts :—(1) That paralysis affects especially the sensorium, to a less degree the special senses, and rarely motility; (2) that irritation seldom selects the sensorium (*e.g.*, delirium); it mostly engages the motor paths (convulsions), and never implicates the special senses.

Uræmic convulsions are tonic or clonic. Described usually as general, they may by unusual localisation resemble focal symptoms. Convulsions have simulated epilepsy and Jacksonian epilepsy. Nystagmus, localised tremblings, and twitchings are recorded. Twitchings are easily overlooked before and after coma. Grinding of the teeth, frequently observed in meningitis, also occurs in uræmia. Although tonic convulsions rarely complicate uræmia, yet a tetanic type is recognised. Avrard relates a case in which convulsions on one side and contractures on the other were combined. Jaccoud places on record three cases of spasmodic contractures of the forearm and cervico-dorsal flexors, producing opisthotonos. Convulsions and contractures have coincided upon one side of the body, and a case of flaccid hemiplegia was transformed by uræmia into hemiplegia with convulsions and contractures.

Rigidity of the neck, rarely absent in meningitis, cannot be excluded from the symptomatology of uræmia (cases of Jaccoud, Kussmaul, Rose, Weiss, Coheu, and Thomas). The hands, usually free in tetanus, are involved in uræmia. Retraction of the head is also caused by rheumatism, diseases in the medulla, aneurism of basilar artery, brain-tumours in the posterior fossa, peripheral irritation, tender cervical glands, and abdominal disturbances.

Paralyses in uræmia are infrequent, so that Lesègue, Lecorché, and Talamon deny their existence. They are chiefly transitory hemiplegias. The cases assigned are cerebral œdema, capillary hemorrhage, softening, apoplexy, inflammatory foci, or cortical over-stimulation by toxins.—*American Journal of the Medical Sciences, August*, 1896.

62.—CONTRACTING GRANULAR KIDNEY.

By W. M. Ord, M.D., F.R.C.P., Senior Physician to St. Thomas's Hospital.

[From the fifth of Dr. Ord's valuable lectures on "Renal Disease" we quote the following remarks on the nervous and respiratory symptoms and treatment of the granular kidney:]

The nervous symptoms in this form of disease are, as a rule, *more intense* and vivid than in the large pale kidney. Insomnia

is, as the disease advances, well marked, and there follow the other symptoms; of headache, convulsions, coma variously associated. There is also a marked tendency to cerebral hemorrhage largely related with the atheroma, but not necessarily dependent upon it, and we may have also in some cases, as the result of slow destructive influence upon the brain, marked insanity. Observations with the ophthalmoscope reveal important changes of the retina, neuritis, retinal hemorrhages, and albuminuric retinitis, in white, opaque, milk-like, irregular patches. The head symptoms of renal disease may be brought about by cerebral anæmia due to contraction of vessels; by cerebral anæmia due to pressure by the serous effusion; or by toxic influences, coming under the head of uræmia. This form of renal disease is—at all events for a very long part of its course—comparatively uncomplicated with dropsies or effusions; therefore they cannot be considered so fully as they were in the preceding instance, and we are left more to consider the influence of cerebral anæmia due to arterial tension, on the one hand, or of cerebral poisoning due to uræmia. About eighteen months or two years ago my house-physician at the time asked me, when I was just going up to the wards one day, "Suppose you have a man with well-marked contracting granular kidney, insomnia, and violent headache, and you bleed him, what would you expect?" I replied, "Convulsions." "Well," he said, "that is exactly what has happened. We have had a case of this kind. The man's headache was so intense that we applied leeches to his head, and as soon as the leeches had fairly bled him, he had a very violent attack of epileptiform convulsions."

We have next a very ugly set of symptoms connected with respiration in advanced contracting granular kidney. We have these constantly before us; they are often some of the earliest symptoms of the disease, not infrequently occurring before albumen is recognised. The attacks may be such as would be apparently attacks of ordinary asthma — perhaps, at first, apparently related with acidity in the stomach. Not seldom a man will come and say that he has had these attacks again and again in the middle of the night. He has found out that he can relieve himself by taking a teaspoonful of bicarbonate of potash in water. These are probably either attacks of spasmodic contraction of bronchial tubes, or, may be, of temporary dilatation of the heart in face of sudden increase of arterial tension. In the later stages of the disease these may occur, or may be replaced by a very particular difficulty of breathing which are spoken of as cardiac asthma, when the patient, either pallid or with a very blue flush, is obliged to sit up constantly—when to lie down is impossible. Though the patient complains of great difficulty of breathing, as you watch him he very often

presents no real labour in breathing; he has only quickened respiration. There is no great movement of the chest wall in excess of what it should be. You cannot study such a man without feeling that the difficulty of breathing consists more in the sensation of difficulty than in the reality; but you will see a person with this condition sit up for days together; and when this does occur, it taxes all your powers to support the man in this horrible condition. Support him with bandages, help him by putting some support in front, help him by the hands of attendants. This difficulty of breathing is very generally attributed to the difficulty which the heart has in propelling the blood through the arteries, particularly, in this case, through the pulmonary artery; so that the lungs are supposed to receive an inadequate supply of blood. That, I think, is very probably a factor; but there is also, I think, another factor coming out when you look at the case carefully, and that is a nervous factor.

We do not often get pulmonary œdema till late in this disease. Acute inflammations are particularly common in this form of disease, more common than in the large pale kidney. These are particularly serous; also visceral. Pericarditis is perhaps the most common, pleurisy less common, peritonitis less common.

In the treatment of this form of disease we may begin as we began before, with noting the necessity of keeping the patient warm, of, if possible, keeping him in a warm climate, and of dieting him. The dietary here would be on the same principles as before. I need not recapitulate them. I will just run over a few of the points of treatment in regard to particular symptoms or the use of drugs. Purgatives are, of course, necessary if there be very much dropsy, in which case you give such as would produce watery stools, as, for example, jalap, salines. But where there is not dropsy it is often still important to keep the patient's bowels regularly open. If it be true, as I think it is, that a good deal of suffering is due to excessive arterial tension, you must understand that wherever a man has anything like constipation arterial tension is at once increased. Therefore, in all cases of this kind it is desirable, by some aperient or other, to maintain a daily and steady action of the bowels, increased if there is any tendency to dropsy.

For treatment of this disease people have recommended alkalies and salines, particularly in view of the possible presence of gout. We often also use tonics where the patient is anæmic and weak, particularly such tonics as iron, arsenic, and quinine. In the very difficult breathing which I have tried to describe, various remedies have been used. The things which I should rely upon most would be nitro-glycerine, chloral, and the bromides: bromide of ammonium or potassium. Nitro-glycerine would, in cases of high tension and difficulty of breathing, be

given at first in dose of $\frac{1}{100}$ of a grain three times a day; or this may be increased to two or three hundredths. In very extreme cases, if this fail, chloral may be given either by the mouth or (if there be vomiting) by subcutaneous injection. In one or two cases where there has been with the painful orthopnœa, and with an irritable stomach, such condition as prevented medicines being well given in the mouth, I have ordered the injection of chloral under the skin. I was led to do this by an interesting paper by Dr. Hunter of his experience in treatment of cholera in India, where, in the state of collapse when the arteries were reduced to mere threads, he found great curative benefit to result from the hypodermic injection of chloral. I have sometimes used this, and always with at least temporary benefit. It is often convenient to give, in cases of extreme arterial tension, a mixture of either nitro-glycerine with bromide or chloral with bromide, this being particularly useful where the patient has much insomnia. Opium would be improper as a remedy to be given in renal disease, and so when a patient is very sleepless we may often perfectly safely procure him a comparatively good night's rest by giving him 20 grains of hydrate of chloral and 30 grains of bromide of ammonium together.

At the end of last lecture somebody asked me why opium was not safe in these renal affections, which was a very proper question, and I will now answer it. It is not safe for more than one reason. Opium has the property of diminishing the excretory activity of the kidneys. In these forms of renal disease this excretory power is already dangerously diminished; therefore we cannot go on to diminish it further. That is one reason. Further, opium no doubt itself has to be excreted by the kidney; and, as opium interferes with the action of the kidneys, it, so to speak, interferes also with its own excretion in the same sort of degree, and tends to accumulate within the system, and to be additionally deadly. I have noted already, when we were dealing with affections of the intestines, that it is unwise to give any poisonous drugs, such as belladonna or strychnine, when the kidneys are acting imperfectly. The same applies to opium.—*The Practitioner, June*, 1896.

Surgery.

GENERAL SURGERY AND THERAPEUTICS.

63.—ANÆSTHETICS IN OPERATIVE SURGERY.

By Frederick Treves, F.R.C.S.,
Surgeon to, and Lecturer on Surgery at, the London Hospital.

[The following is taken from Mr. Treves' article in the jubilee number of anæsthesia of *The Practitioner*, October, 1896:]

For many years—if I might be allowed to give my own experience—I had but little acquaintance with any anæsthetic but chloroform. I used it in all abdominal cases, and had the advantage of the assistance of an anæsthetist who not only preferred chloroform, but who was marvellously successful in its administration. For the last seven or eight years I have entirely abandoned chloroform for gas and ether, and of quite late years have had none but accidental or casual experiences of chloroform. I am convinced that, of the two agents, ether is, in general terms, to be preferred.

The qualities required in an anæsthetic are—(1) That it should be safe; (2) that it should be as little disagreeable to take as possible; (3) that it should produce thorough muscular relaxation; (4) that it should be followed by no ill after-effects, such as vomiting, catarrh, &c.; (5) that it should not affect prejudicially the question of hemorrhage.

(1) I am assured that ether is infinitely safer than chloroform. It may be allowed that in thoroughly experienced hands there is no more danger with chloroform than with ether, but the risk must be estimated as it pertains to the average administrator, and not to the special few. If regarded from this standpoint, chloroform is not suited as an indiscriminate or general anæsthetic to be used by anæsthetists of slight experience. I feel sure that there will be nearly a unanimous agreement that, in the hands of the medical multitude, ether is the safer of the two drugs. It is claimed that chloroform is used very extensively and safely in midwifery, and is often administered in such cases in a very casual manner; but in such examples, I understand, anæsthesia is never deep—is, indeed, imperfect—and is frequently relaxed. To institute a comparison, a surgical operation, such as an amputation of the breast, must be accepted *as a test*. It might here be observed that there are instances in

which no anæsthetic can be given without a very considerable risk of a fatal result. Such instances are especially to be found among advanced cases of intestinal obstruction with considerable distension of the abdomen and a fluttering and rapidly failing pulse. In these patients, as soon as the reflexes are abolished by the anæsthetic, there is often a gush of vomit from the mouth and nose, and death is immediate. In other examples the pulse and respirations cease and the thorax becomes rigid, and, the distension of the abdomen being great, artificial respiration is nearly impracticable. These disastrous results are as common with ether as with chloroform. Such advanced cases call for no anæsthetic. The sensorium is already dulled, and I have several times carried out an iliac colotomy or an enterostomy in these cases without an anæsthetic of any kind, and without more evidence of distress than is expressed by a few deep moans.

(2) Patients who have had experience of both chloroform and gas and ether, with few exceptions, prefer the latter. To the onlooker it would certainly appear that the gas and ether involved the less inconvenience, and secured the more rapid insensibility. I have used gas and ether on patients of all ages, from young children to those who are well advanced in years, and have seen no difficulty in its administration.

(3) Thorough muscular relaxation can be obtained with ether. In abdominal operations it is very essential that the muscular parietes should be quite relaxed. In the very great majority of instances ether secures this perfectly. Now and then, however, the ether appears to fail, and chloroform has to be substituted, but the cases are very rare, and with some anæsthetists are unknown. I have observed that muscular relaxation is less easily secured when the abdominal incision is above the umbilical line than when it is below it. In operations upon the stomach especially I have noticed that the parietal rigidity has often been conspicuous. In certain of these cases the abdominal wall is retracted.

(4) Sickness following operation is certainly much less common after ether than after chloroform. In abdominal operations this is a matter of considerable importance, and it is in this class of case particularly that I have noted the difference between the two agents. There is an element in the production of sickness after operation which is apparently independent of the kind of anæthetic employed, and which is really proper to the patient. Those comparatively rare cases in which—without complication—vomiting persists for twenty-four or forty-eight hours after the operation I have met with both with chloroform and with ether. The same remark applies to that uncontrollable hiccough which may appear after operation, especially on the abdomen, and may continue for thirty-six hours or longer. Now

and then the vomiting is due to causes not directly depending upon the anæsthetic or the operation, as is seen in cases of iodoform poisoning in those who are peculiarly susceptible to the drug. Most of such susceptible persons are, I notice, fair-complexioned, and the vomiting due to this cause may appear within a few hours of recovery from the anæsthetic. It may be exceedingly distressing, and may occur when quite a small amount of iodoform has been introduced into a wound-cavity or applied to a mucous surface. To return to the original question, I may say that, in my experience with gas and ether in abdominal operations of average severity, vomiting after the return to complete consciousness does not occur in the majority of cases. This was not my experience with chloroform.

Ether, on the other hand, has one disadvantage which cannot be urged against chloroform: it is apt to irritate the respiratory mucous membrane. This is especially marked in instances in which some catarrh of the air-passages already exists. It thus happens that in most of the operations involving the respiratory organs or the pleural space ether is not admissible. I think it should be avoided in any case in which tracheal or bronchial catarrh exists. Ether is undoubtedly a distinct irritant to a mucous surface. This was demonstrated in an intense manner at the time when it was proposed that anæsthesia should be produced by the introduction of ether vapour into the colon. The anæsthesia was undoubted, but in the two cases in which I made trial of this uncouth method the after-colitis was very serious. Now and then patients with normal respiratory organs who have taken ether have complained of great "soreness" within the chest, and occasionally a little streak of blood has been noticed in sputum expectorated some two or three days after the operation.

(5) It is urged against ether that it produces greater venous engorgement during operation than does chloroform, and also that it leads to more oozing from divided parts. I do not think that this objection is well founded. The question is one rather of the method of administration. With a skilled anæsthetist the difference between the condition of the vessels when the patient is under ether and under chloroform is scarcely to be noticed, and such increased venous engorgement as may attend upon ether is certainly in no way inconvenient. Some anæsthetists who have not mastered the art of ether administration bring about in the patient a state of asphyxia which certainly may embarrass the operator. It has not been my experience that more bleeding points require ligature when ether is employed than when chloroform is the anæsthetic; but, on the other hand, I think that the after-oozing is greater with chloroform than with ether.

I prefer gas and ether in the operation for the removal of post-nasal growths and in the excision of tuberculous glands from the neck; and I have found no inconvenience from its use in dealing with extensive and vascular adhesions within the abdomen. The three surgical procedures just named afford, it will be allowed, conspicuous examples for the testing of this question of venous oozing.

64.—NOTES ON FOREIGN BODIES IN VARIOUS REGIONS.

By J. W. Smith, M.B., M.C., F.R.C.S.,
Junior Anæsthetist, late Resident Surgical Officer, Manchester Royal Infirmary.

[The following is taken from Mr. Smith's paper, which is based on a considerable experience obtained in the Manchester Royal Infirmary:]

The Eye.—The discovery and removal of a foreign body within the lower lid is an easy matter, but it is more difficult to evert the upper lid so as to examine thoroughly the upper conjunctiva. The patient should, of course, be placed in a good light; should be directed to look downwards; and should sit in a high-backed chair, on which the back of his head can rest. The body, when found, is most readily removed by the corner of a folded piece of lint on which a little castor oil has been dropped. The grit adheres better to this than to a camel's-hair brush. If the foreign body has been present for some time, swelling and œdema of the conjunctiva ensue and render its discovery difficult. It has once occurred to me to find embedded in the conjunctiva of the lower lid a grain of wheat, which, having been there about a fortnight, had commenced to sprout.

When a splinter of iron or steel has entered the anterior layers of the cornea, no attempt should be made to remove it until the eye has been anæsthetised by the instillation of a few drops of a five per cent. solution of cocaine. One can then with greater precision proceed to dig out the body, either with the special spud devised for the purpose, or with a fine, flat-bladed needle. The cornea immediately in contact with the splinter is often stained brown; and it is sometimes difficult on this account to be sure that all the metallic particles have been removed. If, after removal, the resulting corneal abrasion be at all deep, it is advisable to use atropin, and keep the eye covered for a few days.

The Nasal Cavity.—The substances most commonly introduced are beads, peas, beans, maize, or pieces of slate pencil. In attempting their extraction I always use a probe, bent about half an inch from its end to a right angle. With this one can examine the nares without causing pain, localise the position of the body, and then, passing the bent end over and behind it, can lever the body forward, a proceeding quite safe and easy in the narrow upright cavity.

The Ear.—Almost all extraneous substances introduced into the external meatus can be removed by means of a current of warm water directed past them by the fine-pointed nozzle of a syringe. Sometimes it happens that the body fills the meatus so accurately that the stream of water cannot be directed past it. A body impermeable to moisture, such as a bead or pebble, which is thus fixed, will generally work loose in two or three days if left alone, without causing great pain or harm. On the other hand, such substances as peas, beans, or maize, which swell up if left, and cause intolerable pain, should be removed without delay. If they cannot be syringed out, an anæsthetic should be given and their removal cautiously attempted by forceps. If the pea has already become swollen and softened it can be broken up and the fragments syringed out.

Throat, Œsophagus, and Stomach.—When a patient presents himself with an alleged foreign body in his throat it must first be decided whether the body is still present there, for in a large number of cases it will be found to have passed on to the stomach. To this end a thorough inspection of the throat must be undertaken, especially when the body is small and sharp, *e.g.*, a fish-bone, and likely to have penetrated the mucous membrane. Such bodies are apt to enter the tonsil or pharyngeal wall. A larger body will probably become impacted further down behind the cricoid cartilage, when an examination with the finger becomes necessary to determine its presence and position. In one class of case—where a patient is being "choked" by a mass of unmasticated food, generally meat—this digital examination should be made without a moment's delay. The bolus is here impacted in the pharynx, and mechanically blocks the rima glotiddis, but the fact does not seem to be sufficiently appreciated that when suffocation is imminent, owing to the impaction of a large foreign body in the throat, that body is within reach of the finger, and can be hooked up from its dangerous position by the finger. As far as my experience goes, opposite the cricoid cartilage is the most common spot at which a foreign body is liable to become impacted.

In all probability because the lumen of the gullet is here narrowed by the projection into its anterior wall of the posterior aspect of the cricoid. It is quite astonishing what a prominent

ridge the cricoid causes. I remember being considerably puzzled by it formerly, when examining the throat with the finger. It was thought there must be some abnormality, or a foreign body impacted there.

The mode of treatment of a body impacted in the œsophagus depends to some extent on the nature of the body. Semon, in a recent and instructive paper, lays down two rules on this subject:—(1) "No foreign body, the presence of which has been actually detected, ought to be allowed to remain impacted, even if at the time it does not produce serious symptoms. (2) "No attempt should ever be made to ram an angular or pointed body forcibly down." One cannot for a moment doubt that the principles which dictate these rules are correct, and yet they are not always followed out in practice.

The impaction of a dental plate in the œsophagus is always a most serious accident, even if the plate is small and can be recovered by œsophageal forceps, and much more so if œsophagotomy becomes necessary. I can call to mind six of such cases, of which four proved fatal.

Whilst, then, a few soft bodies, such as lumps of meat without bone, lodged far down in the œsophagus, may be cautiously pushed onwards into the stomach by a large-sized bougie, the far greater number, generally bones or coins, must be made, if possible, to retrace their steps. And for this purpose I have found no instrument so useful as the umbrella probang; in fact, I have not often found it necessary to use any other. It was customary in the accident-room to pass this bougie twice; then if the patient could swallow—first water and afterwards a bolus of bread—without pain, he was allowed to depart. Once a body enters the stomach, it generally travels safely on through the intestines, and is passed per anum; but I have, on several occasions—on examining the rectum for trouble there—found a bone, which, having successfully navigated the pylorus and the ileo-cæcal valve, has become impacted in the rectum, setting up ulceration or a blind internal fistula.

The *rôle* of foreign bodies in setting up acute mischief in the vermiform appendix does not seem to be considered of quite so much importance now as it was some years ago. Of the very considerable number of cases in which I have assisted at the operation for removal of the appendix, or for acute appendicular abscess, I should say no extraneous matter was found in more than half. Of the rest an intestinal concretion was found in the majority; in one, an orange pip; in another, an orange pip and a raisin pip together; and in two other cases pieces of wood—probably parts of matches.

Larynx and Trachœa.—When the body is in the larynx the symptoms are most acute, and call for immediate succour. If

there is time the patient may be inverted and vigorously shaken; but in most cases the condition is desperate and a laryngotomy must be at once performed. In doing this it is not wise to spend time in making a vertical incision; the cricothyroid interval should be determined with the finger, and the knife, with its blade held horizontally, entered in the middle line and pushed steadily through into the larynx. The wound being then held open either by rotating the blade of the knife in it, or by slipping in a pair of forceps, air is allowed to enter. If appliances are at hand and there is a little more time, tracheotomy is probably the preferable operation—especially if there is reason to believe that the body lies in the trachæa or bronchi. In the latter case the very urgent dyspnœa, as a rule, passes off in a few minutes. There should, however, be no delay in attempting to extract the body, for at any moment it may be coughed up into the larynx and render suffocation imminent. The patient may be inverted; but this is only advisable when the surgeon is prepared to perform tracheotomy at once, lest the body become impacted in the arynx in its passage outwards.

Urethra, &c.—The most common foreign body found impacted in the urethra, is, of course, a calculus, and the usual points of impaction are at the meatus, the triangular ligament, or near the root of the penis. The calculus is generally oval and smooth, allowing it to be grasped and pulled forward by means of urethral forceps; when it is rough and tuberculated this proceeding is much more difficult; but only once have I known a perineal section performed for this condition. It is recommended that if a calculus cannot be brought forward, it should be pushed back into the membranous portion of the urethra, to avoid cutting into the anterior urethra, which is apt to be followed by fistula; but it looks as though a calculus which is capable of being pushed backwards ought also to be capable of delivery per meatum.

Of foreign bodies in the bladder, I have seen the following:—A piece of clay pipe stem, a vulcanite pipe stem on two occasions, once in the female bladder; a piece of glass rod four or five inches long (in the centre of a large concretion recently removed by Mr. Southam); a hairpin; a filiform bougie from Teevan's urethrotome; and the end of a self-retaining catheter.

Trunk and Extremities.—Since these notes were first put together the discovery of the Rœntgen rays and their action has become a matter of history; and now, not only has the revelation of metallic bodies in the tissues become an everyday occurrence, but the prospect of seeing the living viscera *in situ* has been brought within the bounds of immediate probability.—*Medical Chronicle, September*, 1896.

65.—THE AMBULATORY TREATMENT OF FRACTURES OF THE LOWER EXTREMITY.

By Dr. Lewis S. Pilcher.

During the session of the American Surgical Association held in New York City in May, 1895, I presented before the society a man who, three weeks before, had sustained an injury of the ankle, comprising a fracture of the fibula three inches above the malleolus, with compound dislocation and fracture of the lower end of the tibia, one-half of the articular surface of the tibia having been obliquely chipped off, and the broken end of the tibia protruded through a lacerated wound of the soft tissues on the inner side of the ankle. Notwithstanding such an accident, for one week already the man had been walking about, using freely in locomotion the injured leg with no other assistance than a cane ; on the day when he was presented to the society he had walked a long distance to reach the place of the meeting. The subsequent course of this case to entire recovery was smooth and uncomplicated. The special point of interest that attached to this case, to illustrate which he was brought forward, was not so much the smooth and rapid repair of so complicated an injury, as the fact that it was possible to apply to such an injury a dressing, cheap and readily extemporised, which would permit the limb to be used in locomotion while repair was going on.

For the demonstration that it was practicable to so arrange the dressings that the limb need not be slung up, and that the weight of the body could be fully supported by it, and that not even the jarring or prolonged walking upon it was to be feared, surgery is indebted to the German surgeons.

Although the plaster-of-Paris bandage has been the material used in almost all cases, and by its peculiar qualities is pre-eminently adapted for satisfying the special indications of the dressing, nevertheless any other combination of materials that may be desired that will give the needed suspension and fixation may be substituted for it.

The essential feature is that the injured limb is used as an active means of locomotion while repair is going on. The possibility of this depends upon the ability to so adjust the dressing that the portion of the limb distal to the fracture shall be suspended in the rigid dressing which below projects beyond the sole of the foot, to come in contact with the ground, and above bears upon the prominences about the knee and the conical surfaces of the thigh, or upon the tuberosity of the ischium as the case may be, so that the weight of the body is transmitted from these prominences through the dressing to

the ground, while the point of fracture is protected from injury. It is obvious that in the swinging dependent position of the limb and the restricted muscular movements which are unavoidable in the efforts at using the limb in locomotion, a condition more favourable to the repair of the fracture is created than attends the anæmia caused by the position, the bandaging, and the disuse which are a part of the usually followed methods of treatment.

Unless a surgeon has technical skill with the use of the plaster bandage it would be unwise for him to attempt to apply to a recent fracture the ambulatory dressing. In the cases under my personal supervision much advantage in strengthening the lateral columns of the dressing from the sole of the foot to the knee has been gained by inserting between the layers of bandage a two-inch wide strip of wire gauze, which, with one end placed at the side of the foot, is carried across the sole and then upward over the malleolus to the knee; two such strips, one for each side, are required. The sole of the casing should be strengthened by the insertion of a strip formed of a half-dozen or more thicknesses of the plaster bandage, two inches wide, carried from the base of the toes backward along the sole, over the heel, and up the leg as far as the middle of the calf. When the dressing has been completed the sole of the foot is separated from the sole of the casing by a layer of cotton at least one inch in thickness, while the tapering surface of the leg above the point of fracture and the bony prominences about the knee are closely embraced by the casing, and are thus made to receive the weight of the body when it is thrown upon the particular limb in the act of walking, while the foot and lower half of the leg are suspended in, but steadied and protected by, the lower half of the casing, through which the weight from above is transmitted to the ground.

The application of an ambulatory dressing to a fracture of the femur presents very much greater technical difficulties than in the case of fractures below the knee. Personally, I have applied an ambulatory dressing in only one case of fracture of the femur. It seemed to me that a simpler, less cumbrous, and more efficient and reliable apparatus than the plaster-of-Paris dressing, described by Albers, was to be found in the ordinary traction hip-splint of the orthopædist, and I accordingly made use of it.

The fracture was first supported by short coaptation splints, and the limb was then slung in the long traction bar, which below projected for three inches beyond the sole of the foot, and above was attached to a steel band, which half encircled the pelvis, and from which suitable perineal straps passed from front to rear upon which the weight of the body came and was

transmitted through the long rigid bar to the ground in locomotion. A suitable lift was applied to the sole of the shoe worn on the foot of the sound limb. The case in which this apparatus was applied was one of compound fracture of the shaft of the femur at its middle. The apparatus was not applied until the third week after the injury, the delay being caused by dilatoriness in procuring the apparatus and not by anything in the condition of the limb. The working of the apparatus when finally applied was perfectly satisfactory; the patient immediately left his bed and began to walk about, and after a few days was discharged from the hospital, the further oversight of the case being conducted in the out-patient department of the hospital. In this particular case the femur had been broken by a kick from a horse, the soft tissues on the front of the thigh having been bluntly cut down to the bone by the shoe-cork, and a nearly transverse serrated fracture of the bone produced. By a free longitudinal incision anteriorly, supplemented by a similar incision on the back of the limb and iodoform gauze packings, primary drainage was provided for, while accurate reposition of the fragments was effected. Buck's extension with a long side splint to steady the limb, constituted the apparatus employed previous to the application of the ambulatory apparatus. The ultimate result was singularly good. Not only was firm consolidation early secured, and muscular atrophy and joint-stiffness avoided to a large degree, but shortening of the limb was escaped; in fact, the injured limb at the close of the treatment was one centimetre longer than the uninjured one. How much longer it may have been before the injury there is no means of knowing.

The number of cases of fracture of the leg in my service that, up to the date of writing, May 15, 1896, have been treated by an ambulatory dressing is twenty—namely, twelve fractures of both bones (of which four were compound), four of the tibia alone, and four of the fibula alone. The results which followed this method of treatment have been very satisfactory. In the simple fractures in very few was the detention in hospital prolonged beyond one or two days. In the compound fractures, some of which presented conditions notably difficult of management, the ambulatory dressing was applied on the first, ninth, fourteenth, and forty-second days respectively, this varying period being due to the special conditions of the injury in the different cases. In all the cases, both compound and simple, the patient began to use the injured leg as a means of locomotion at once after the dressing had hardened, and very quickly gained such facility in its use as to dispense with crutches thereafter. As to the length of time during which the apparatus was worn in these cases, at the end of which all

support was discarded, the records are in most of the cases, incomplete, the later observation of the cases having been conducted in the out-patient department of the hospital, or by other surgeons at their homes. I have been informed that in one case in which the apparatus was removed at the end of about six weeks, at which time the fracture—an oblique one of the tibia—was apparently fully consolidated, and the limb was of normal length and contour, the unrestricted use of the limb was followed by subsequent shortening of about one inch, due to gradual elongation of the uniting medium. In a second case, the patient after his discharge from the hospital, neglected to return for further observation, and after some time, beginning to experience discomfort from the apparatus, applied for relief at another institution, and upon the removal of the bandage it was found that considerable pressure necrosis of the soft tissues at the upper and outer side of the leg had occurred which was followed by considerable sloughing, and paralysis of the parts supplied by the peroneal nerve. These two cases seem to me to exemplify the points which especially require to be guarded against in the case of the ambulatory treatment—viz., consecutive shortening in oblique fractures and decubitus.

When fractures of the lower extremity have been treated by the usually followed methods, and at the end of six weeks or more, discarding apparatus, are permitted to go about at will, the patients, as a rule, require some time to regain sufficient confidence in the strength of the united bone to let the whole weight of the body rest upon it. For a considerable length of time the assistance of crutch or cane is depended upon. Meanwhile the bond of union is becoming stronger, and by the time that the patient does let his weight come fully upon it the consolidation has become firm enough to support it. But a patient who has been already using his limb in locomotion for weeks before the removal of the supporting apparatus, whose muscles have not become atrophied from disease, will be inclined to continue to trust his whole weight to the limb after it has been disencumbered, and will be able to freely and powerfully move its muscles. In such case, if the line of fracture has been oblique, the danger is a positive one that some consecutive displacement of the fracture surfaces may result from some elongation of the not yet sufficiently consolidated callus. A disadvantage, therefore, may result from the premature discarding of the apparatus in the class of cases mentioned. That attention should be called to it is all that is required to secure the necessary caution to forestall it. Decubitus is, however, the accident most frequently to be apprehended as a result of the ambulatory dressing; it should be guarded against by judgment as to the time when the

dressing is applied, and by great care in the application itself; symptoms of its occurrence should be carefully watched for during the period in which the dressing is in use, and any complaint of local soreness and discomfort should be the signal for the removal of the dressing, the inspection of the pressure-bearing parts, and the adoption of the necessary means for remedying the pressure, or the substitution of some other method of treatment.

Wrinkles, seams, ridges, or unevenness of any kind in that portion of the bandage which encircles the upper third of the leg and the knee, must therefore be avoided with scrupulous care in the application of the dressing; a tight-fitting, seamless, soft stocking-leg makes an ideal covering to interpose between the skin and the plaster bandage; the plaster bandage should be applied smoothly and as snugly as possible without producing constriction. If the skin of the regions where pressure must be borne is excoriated, or the subcutaneous tissues are œdematous, the application of the dressing must be delayed until a healthy condition has been restored. By the adoption of such precautions as suggest themselves to every surgeon of experience, and by continued oversight during the period that the apparatus is worn, the accidents of decubitus may be prevented altogether or reduced to a minimum.

The time after the injury when it may be proper to apply the ambulatory dressing will depend upon the nature and extent of the damage to the soft parts, and the amount of local reaction following the injury. In ordinary simple fractures it may be applied at once or at the convenience of the surgeon; in compound fractures it may be applied as soon as time enough has elapsed to show that the primary cares have been successful in warding off infection—that is, within a week or ten days. In compound fractures that have suppurated a further delay should be had, until all tendency to extension of the infective processes has been overcome.—From an editorial article in the *Annals of Surgery, July*, 1896.

66.—SYPHILITIC JOINT DISEASE IN CHILDREN.

By H. Betham Robinson, M.S.Lond., F.R.C.S.,
Assistant-Surgeon to St. Thomas's and to the East London Hospital for Children.

[The following is from Mr. Robinson's paper. The cases and some other parts have been omitted;]

The effect of syphilis on the joint structures has received rather scant treatment from surgical writers. In most of the ordinary text-books the lesions produced are dismissed very

briefly, and by the student this affection is spoken about as if its occurrence were very rare. On the contrary, as time goes on, and more attention is directed to accuracy in diagnosis, no doubt many cases which are now considered tuberculous and anomalous forms of rheumatoid arthritis, will be relegated to their proper category. With trifling exceptions, the same pathological grouping holds good, whether the cases are due to acquired or congenital syphilis; in both origins of the disease, we presumably have analogous pathological forms.

In this paper my remarks have reference only to the lesions met with in children. Congenital syphilis, as we shall see later, claims one or two forms especially as its own. Many cases in older children may be due to either the hereditary or acquired disease. In an experience of some years among children at the East London Hospital, one is so struck with the frequency of the acquired disease as to cause a halt when classifying the cases as belonging to either one or the other.

Most of the cases appended were undoubtedly due to heredity, as the history shows. In the others, although actual proof was wanting, there is strong probability of this being the *fons et origo* of the disease: at the same time one remembers the possibility of these cases being caused by the disease acquired in early life.

Bearing the above remarks in mind, a classification of the joint disease in children may be made on the following lines:—(1) Epiphysitis of infants. (2) Symmetrical effusions, usually from 8 to 15 years of age. These two forms are essentially associated with the congenital disease. (3) Osteitis (*a*) with simple effusion; (*b*) with gummatous infiltration of the synovial membrane and effusion. (4) Primary gummatous synovitis. These forms are met with whether the disease be inherited or acquired.

Peribursal gummata, so frequent in adults round the patella and olecranon bursæ, I have not met with in children, nor have I been able to locate in children that rare pathological form, the chondro-arthritis described by Virchow, of which some admirable examples from adults were exhibited in the museum of the annual meeting.

(1) *Epiphysitis of Infants.*—This condition is the earliest manifestation of syphilitic disease of bones and joints, the epiphysis being first involved, and almost immediately being attended by effusion into the neighbouring joint. The disease develops rapidly, and is accompanied by well-marked signs of inflammation. The affected limb seems to lose all power, and for this the child may be brought to your notice—pseudo-paralysis. There is a tendency for the epiphysis to become loosened, but with treatment fixation again takes place in most cases apparently without any subsequent alteration to the

length of limb. As a rule, the synovial membrane does not suffer much change, the fluid becoming absorbed, leaving the joint undamaged or with trivial adhesions. In exceptional cases suppuration may occur, but if such be the case the possibility must be borne in mind of an additional infective process at work. The prognosis, if treatment be soon adopted, is favourable, especially if a single joint be attacked; if several joints are involved this appears to indicate a greater intensity of the disease, and is accordingly more fatal.

(2) *Symmetrical Effusions.*—These are almost without exception met with only in the knee-joints. The effusion is rapid and almost painless; it is not accompanied by any definite change in the joint. These effusions, which may be very extensive, as a rule are very responsive to treatment. They occur during the same period as interstitial keratitis manifests itself—namely, between 8 and 15. Since attention was drawn to these cases by Clutton in 1886 their occurrence has been frequently noticed.

We now come to the later manifestations of syphilis, those of the tertiary period, and the preponderance of cases finding their place under Section 3 (where the bone is first affected and the joint secondarily) will be noted. In adults certainly we may find a larger number having primarily synovial changes, but I do not think we have at present sufficient data to lay down authoritatively any hard and fast rule as to the relative proportion of one to the other.

(3) *Osteitis.*—(*a*) With simple effusion. In these cases, although the bone changes were very marked, besides the effusion there was no evidence of any involvement of synovial membrane. (*b*) With gummatous infiltration of the synovial membrane, local or general, with effusion. One of my cases was a very interesting one, for if the mother's tale is to be credited, the genu valgum had its origin in the alteration in the line of the articulation brought about by the gumma in the external condyle. That there was considerable loss of tissue the marked irregularity to be detected showed, and the lessened resistance so caused may have reasonably induced the deformity.

Pathologically, one must suppose that the gummatous swelling, which, from the amount of thickening had been considerable in the substance of the external condyle, had softened in its centre, and under the influence of the pressure on the outer side of the articulation the articular surface had been crushed in. This case bears a very strong likeness to one described by Mr. Jonathan Hutchinson in the Pathological Society's *Transactions*, 1887.

(4) *Primary Gummatous Synovitis.*—This condition of the knee-joints I have only met with in one child, but it resembles

exactly cases seen in adults. There is no doubt in this case that the patient was the victim of both tubercle and syphilis (which is far from infrequent), and, after reading the earlier notes, some might be inclined to consider the former as the sole origin of her trouble. If the knee-joints had been tuberculous, they would be included in the special form associated with König's name, but from an experience of several typical cases of the latter, the joints bore no real resemblance, and, besides, the diagnosis was sustained by the associated periostitis and characteristic ulceration.

The cases described above are fairly typical examples of the various forms of syphilitic joints, and my paper, to me, will have borne some fruit if it only induces others to record their experiences of a similar class of case.—*British Medical Journal, May* 16, 1896.

67.—GANGRENE AS A COMPLICATION AND SEQUEL OF THE CONTINUED FEVERS, ESPECIALLY OF TYPHOID.

By W. W. Keen, M.D., LL.D., Professor of the Principles of Surgery and of Clinical Surgery, Jeffreson College, Philadelphia, Pa.

[Under the treatment, Dr. Keen first refers to preventive treatment, including the use of cardiac tonics, &c. He then proceeds:]

The question of amputation naturally is one of the most important that is raised. In gangrene of the genitals, head, neck, and trunk, operation of course is limited to the removal of the dead and sloughing tissues, and especially in the promotion of the utmost cleanliness, particularly in parts of the body soiled by urine, fæces, or the menstrual discharge. Detergent washes and stimulating douches, the keeping of the rectum free from accumulated fæces, and thorough and free incision in abscesses in the vicinity of the anus are to be especially commended. In the extremities if amputation is necessary, the time when it shall be done depends largely upon whether the gangrene arises from distinct obstruction by a palpable thrombus or embolus, or whether it arises in the peripheral vessels without such an appreciable mechanical obstruction of the main vessels. In the latter case the line of demarcation is usually established pretty early, and the disease is generally unlikely to advance beyond this line. Amputation, therefore, should be done as soon as the

line of demarcation is well pronounced, and it may be done but little above this line, since there is no obstruction in the vessels higher up which would threaten the integrity of the flaps.

In the cases where a distinct thrombus or an embolus has formed, however, the obstruction is very apt to extend farther and farther as time goes on by secondary thrombosis. At what level, therefore, the limit between the tissues which must necessarily die and those in which nature can still keep up a healthy life will occur, cannot be stated definitely until the line of demarcation is well established. But the facts obtained by a study of my two series of cases aid us very distinctly in this matter. When the clot extends only up to the popliteal, the leg may escape gangrene altogether, and, should it follow, I have found it limited in 21 cases to the foot six times, to the lower half of the leg once, and to the upper calf in 14 cases. When the clot extended into the femoral, the gangrene extended to the upper calf in 11, and to the thigh in 8 cases. When the clot extended above Poupart's ligament, the gangrene was limited in 15 cases, to the foot in 1, the calf in 8, and extended above the knee in 6. Amputation in these cases, therefore, should not be done, as a rule, until a well-defined and probably final line of demarcation has been formed. When operating, the leg should be made bloodless by elevation, and kept so by very careful digital compression. The Esmarch bandage, as pointed out by Quervain, should not be used, partly because it may injure the vessels of the stump, and so favour a new arterial or venous thrombus, partly because it may break up an existing venous thrombus, and give rise to a dangerous embolus. To this I would add another evident objection, that the septic fluids in the tissues should not be forced into the general circulation. The hemorrhage will be slight, since certainly the artery and often both artery and vein will be obstructed, so that the "muscles will look like meat soaked in salt and water, and there will be no oozing from the marrow of the bone." Quervain's method of operating was both ingenious and useful. After forming an anterior flap, and before making the posterior flap containing the vessels of the lower thigh, he disarticulated only the bones at the knee-joint, dissected the femur loose for twelve centimetres above the joint, and divided the bone, then exposed the vessels and ligated them, and, last of all, formed his posterior flap. The wisdom of ligating the artery before dividing it was shown by the fact that in the amputated part it was found to be filled with a loose clot, which would almost certainly have been dislodged by the manipulation if the flap had been made prior to ligation, and so have caused considerable hemorrhage. Such patients have not a drop of blood to spare.

As a general rule, therefore, we should wait for the line of demarcation, but the operation should not be deferred long after its appearance. If danger of septic infection or speedy exhaustion should appear, immediate amputation at or above the probable limitation of the disease should be done. The extension of the disease, if the femoral be free, will not be, in the majority of cases, above the tubercle of the tibia. If the femoral be involved, necessitating an amputation of the thigh, the resources and the safety of modern antiseptic surgery would lead us in general to amputate, but in some cases it may be a serious question whether expectant treatment and a relatively long-subsequent amputation might not be less dangerous than an earlier operation.—*Boston Medical and Surgical Journal, July* 9, 1896.

68.—A CASE OF ACUTE HEMORRHAGIC SEPTICÆMIA TREATED BY ANTISTREPTOCOCCUS SERUM.

By CHARLES A. BALLANCE, M.S., F.R.C.S., Assistant Surgeon, St. Thomas's Hospital; and

FRANCIS C. ABBOTT, M.S., F.R.C.S., Resident Assistant Surgeon, St. Thomas's Hospital.

(With note on the mode of preparing the serum, by T. J. BOKENHAM, M.R.C.S., L.R.C.P., late Research Scholar, British Medical Association.)

[The following very acute case is of great interest on account of its being hitherto regarded as beyond the reach of any treatment whether surgical or medical:]

Dr. G. M., aged 30, pricked his thumb in making a post-mortem examination on a case of suppurative peritonitis at 1.45 p.m. on Monday, June 8. At 7 p.m. the thumb began to throb, and during the evening this throbbing increased to burning pain, and between 9 and 10 the red lines of lymph duct inflammation had extended as far as the axilla, and the glands in this region were enlarged. At 4 a.m. on June 9, pain and tension of the pad of the thumb were so great that nitrous oxide gas was given and an incision made. Previous to this vomiting had occurred, and there had been several shivering fits. The temperature at 7.30 a.m. was 103° F. At 9.30 a.m. he was seen by one of us. The whole body was covered with a scarlet septic erythema; the face was puffy and the eyes suffused. The patient complained of severe shooting pains up the arm, and in the intervals of pain was listless and drowsy; the temperature was high and the pulse rapid and soft. It was arranged at once to take him as soon as possible to St. Thomas's Hospital, where he was admitted about 3 p.m.

The condition gradually got worse, and on the evening of the following day (June 10) the temperature was 104·7°, and the pulse 150, soft, feeble, irregular at times, and running. The rash was very brilliant, and

hemorrhagic in places. All day drowsiness had been a marked feature, and the respiration was more rapid than normal, and occasionally jerky. Nourishment was taken with difficulty. There was soreness of the throat, which was of a brilliant red colour. During the day vomiting occurred several times, and also slight bleeding from the nose. Coughing, too, was troublesome, and he hawked up blood-stained mucus from the pharynx. There was no swelling of the thumb, and no discharge of pus from the incision, but there was great pain and tenderness along the forearm and arm, though without obvious swelling or œdema. The axillary glands were large and tender. The red lines were obscured by the rash, but the hard lymph cords could be felt. There was frontal headache and the mind was clouded. The tongue had gradually become coated and dry, and was passing into a typhoid condition. There was slight albuminuria.

At midnight (June 10-11) 3.5 c.cm. of antistreptococcus serum (Burroughs and Wellcome) were injected. This was repeated every four hours. Six hours after the first injection (6 a.m. June 11) certain indications of improvement were manifest:—(1) The mind was clear, and the headache had disappeared; (2) the respiration was regular and less rapid; (3) the pulse was slower; (4) the tongue was moist along the edges.

June 11. All this day the temperature was continuously 104° F. Cold sponging, which was done several times, had no real effect. The tongue continued to clean, but a smart attack of epistaxis occurred. The rash was still as bright, and the blotchy subcutaneous hemorrhages were more evident. Towards evening, after the epistaxis occurred, the pulse became much more rapid and weak, and gave rise to much anxiety. Strychnine and digitalis were ordered every four hours.

During the night the temperature dropped, but much pain and some swelling were noticed in the ball of the thumb, and there was tenderness above the wrist on the radial side, with slight œdema. Notwithstanding the bad night, the general condition was better.

On June 12 the skin was moist, and the tongue was steadily cleaning from the edge, leaving a marked pink moist surface, such as is seen on the throat in diphtheria when the membrane clears under the use of antitoxin. Chloroform was given by Mr. Tyrrell, and an incision into the thenar eminence, opening the sheath of the tendon, was made; also one over the first phalanx of the thumb. The parts, though swollen and tense, contained no visible pus. At mid-day the dose of antitoxin was doubled, 7 c.cm. being injected every four hours.

The chart shows from this date the gradual convalescence of the patient. No further incisions were necessary, the swelling and œdema above the wrist gradually disappeared, and the incisions all began to heal without any visible discharge of pus. The rash did not disappear entirely until June 16.

Remarks.—The use of the antitoxic serum appears to us to have produced the following effects:—(1) The mind became clear notwithstanding the high fever; (2) the frontal headache ceased; (3) the tongue began to clean and become moist from the edge until it was clean, moist, and of a peculiar pink colour all over; (4) the pulse became slower and of better quality; (5) the respiration was slower and never jerky afterwards; (6) the skin, which was dry and burning, became moist, and sweating occurred; (7) the wounds healed without suppuration, and the threatened inflammation of the great synovial sac under the anterior annular ligament subsided.

Every care was taken to asepticise the syringe used for the injection, to cleanse the skin at the site of injection, and to maintain the sterility of the serum by keeping it in ice, and using other obvious precautions. The injections were given into the loin and abdominal wall. Notwithstanding the large number of injections (twenty-eight in all—eight of 3½ c.cm. and twenty of 7 c.cm.) no local reaction has occurred at all except a fleeting urticaria limited to the site of injection, which was noticed once or twice, and did not produce any inconvenience.

The recovery of this case would seem to encourage the employment of the antistreptococcus serum in many other serious surgical conditions. Amongst many others, the following occur to us:—Fracture of the skull

with risk of suppurative meningitis, acute necrosis, acute septicæmia or pyæmia from any cause, rapidly spreading gangrene or cellulitis, erysipelas, general suppurative peritonitis, and septic complications of middle ear disease.

With regard to dose, we should be inclined to commence by injecting a large one (say 20 c.cm.), and then to give a smaller dose (say 7 c.cm.) every four hours. After most of the injections given in the above case the temperature temporarily dropped, but soon rose again, and we fancy that it is of great importance to give the injections frequently.

We append a note by Mr. Bokenham, who supervised the preparation of the serum, as to the animal from which it was obtained, the method employed to immunise the animal, and the tests carried out to estimate the antitoxic value of the serum from the immunised animal.

Dr. Bokenham's Note:—(1) Antistreptococcus serum is serum obtained from the blood of an ass which has received during several months repeated and increasing injections of living virulent streptococci. (2) It will be seen at once, therefore, that the principle involved differs in important respects from that involved in the preparation of antidiphtheria serum. In this last it is the toxins, formed by diphtheria bacilli in bouillon cultures, which are employed to set up immunity in animals furnishing the serum. Antistreptococcus serum resembles rather the diphtheria "antimycetime" as prepared by Klein than the antitoxin ordinarily obtainable, and may be expected to possess antimycotic rather than antitoxic properties. (3) The ordinary streptococcus of the laboratory is practically useless for the production of an active serum. Cultures obtained from various sources—among others from my friends Drs. Marmorek and Roger—failed altogether to give any satisfactory results until their virulence had been reinforced by successive passages through susceptible animals, or by other means which need not be here described. (4) Each injection of streptococci was always followed by considerable local and general reaction, characterised principally by local swelling and rise of body temperature. Such disturbances usually continued during several days, but ultimately a complete recovery took place. (5) Tests applied to the serum obtainable after each injection showed a steady increase of its antimycotic powers. Such tests are carried out as follows:—The lethal dose of a standard streptococcus culture having been ascertained, similar quantities of culture are mixed *in vitro* with various proportions (*a*) of normal ass serum, (*b*) of the serum to be tested. On injecting these mixtures into animals of nearly equal weights it is readily demonstrable that while the control mixtures are almost uniformly fatal, those containing the prepared serum in proper proportion are practically innocuous. A maximum of one-hundredth of a cubic centimetre of serum should neutralise an otherwise lethal dose of streptococci. (6) It has been demonstrated that streptococci may remain in the blood of an animal for several days after their introduction. To ensure

their absence from serum intended for clinical use, it is therefore imperative to remove all chance microbes by filtration through porcelain. In actual practice Chamberland filters are used, and the serum is made to pass through them by pressure furnished by liquid carbonic acid gas. The actual pressure required need seldom exceed one of about 70 lbs. to the square inch, such a pressure being conveniently secured by using one of Uhlmann and Keutgen's regulating valves, in connection with the cylinders of compressed gas.—*British Medical Journal, July* 4, 1896.

69.—THE TOXINE TREATMENT OF MALIGNANT TUMOURS.

[The following is a leader from the *New York Medical Journal*, September 19, 1896. It must be added that the reports on this treatment have been mostly, to say the least, disappointing.]

In the *Wiener medizinische Blätter* for August 27 we find an abstract of an account by Dr. Matagne, of Brussels, of his experience in the treatment of "inoperable" malignant tumours with Dr. Coley's erysipelas and *Bacillus prodigiosus* toxines, originally published in the *Gazette médicale de Liége*. He has employed the treatment in 14 cases, and maintains that in 1 of them a complete cure was accomplished. The patient was a man, 64 years old, who in January, 1895, first noticed something abnormal in his mouth. In February he consulted a physician, who diagnosticated epithelioma and advised an operation, to which the patient did not consent. Many other physicians saw the patient, and they all concurred as to the diagnosis and urged the man to have an operation performed. Early in June the patient consulted Dr. Matagne. By this time he had a three-lobed tumour which occupied the floor of the mouth. The largest lobe was as large as a nut; in the left sub-maxillary region there was a gland as large as a small nut—the kind of nut is not specified in either instance—and under the chin there were two other glands of the size of a bean. The tumour was hard and ulcerating, but without suppuration, and lancinating pains proceeded from it toward the left ear. In a short time the symptoms were so marked that no observer had a doubt of the epitheliomatous nature of the growth. However, no histological examination of the neoplasm was made for fear of opening a channel for secondary infection.

The treatment was begun on June 10. Five centigrammes of the toxine were injected beneath the skin of the neck below the hyoid bone. In two hours the man's temperature was 101·3° F. On June 16 forty centigrammes were injected into

the tumour, and hard swellings made their appearance in half an hour; the tongue remained quite swollen for two entire days. The highest temperature reached during the treatment was 105·8° F. During the whole febrile period the tumour diminished in size very decidedly, and the diminution kept on after the subsidence of the fever, so that by the beginning of September not a trace of the growth remained.

Another case was one of recurrent sarcoma of the neck in a woman 78 years old. The tumour was as large as an egg, and situated in front of the sterno-cleido-mastoid muscle. Another tumour, of the size of a hazelnut, was seated in the masseteric region, and two small but very hard glands were to be felt under the chin. After a course of treatment lasting three months and a half, the injections being given every second day, the large tumour had wholly disappeared, and the one in the masseteric region could hardly be felt, but the enlarged glands had not undergone complete involution when the treatment was accidentally interrupted. In six months after their discontinuance there was a moderate aggravation of the disease, and the patient was advised to submit to the injections again.

In a third case, one of recurrent sarcoma of the neck of the size of a fœtal head, the patient was treated with the toxines for three months, and the tumour had then shrunk to two-thirds of its original size. The patient, out of patience with the long duration of the treatment, decided to call in a surgeon, who operated with a fatal result. In a case of recurrent sarcoma of the arm the injections checked the growth of the tumour only temporarily. In one of sarcoma of the pharynx no result was noted other than a brief restraint of the growth.

The sixth case was one of deeply ulcerated sarcoma of the neck in a very debilitated man, 64 years old, who died during the reaction following an injection of ten cubic centimetres of the toxines after the treatment had been carried on for five weeks. The tumour had diminished in volume a little. The 7 other cases were all examples of epitheloma or carcinoma, and save in 2 of them, the results were but very slight. In 1 of these 2, a recurrent carcinoma of the breast, the injections seemed to check the growth of the tumour, for it remained stationary for several months; in the other, a uterine carcinoma, there was alleviation of the pain, together with reduction of the size of the tumour, and the improvement lasted for four months.

Such results as Dr. Matagne has reported certainly ought to encourage Dr. Coley to persevere in his labours. It is evident, we think, that the toxine treatment is of some value, more particularly in cases of sarcoma; the problem is to ascertain the class of cases in which it holds out a distinct promise of proving decidedly palliative if not curative.

70.—ON SOME OF THE LIMITS OF THE ART OF SURGERY.

By N. Senn, M.D., Ph.D., LL.D.,
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Attending Surgeon Presbyterian Hospital; Surgeon-in-Chief St. Joseph's Hospital.

[It has been impossible to do more than include here some parts of Dr. Senn's paper. After pointing out the great modern advances, the author endeavours to show how there are limits to the art of surgery which have been transgressed owing to excessive zeal. The criticism contained in some parts of the paper is truly serious enough, and if it had not come from so well-known a surgeon and observer as Dr. Senn, it might have been hoped that the picture had been perchance overdrawn.]

Antisepsis and Asepsis.—The marvellous reduction in the mortality following injuries and operations which the present generation has witnessed is largely due to the prevention of wound complications by the employment of efficient antiseptic and aseptic precautions. Improved means of hæmostasis and the more efficient treatment of shock might reasonably claim a certain share in bringing about such a desirable change in the results of surgical practice, but what has made our work more satisfactory and the statistics of various operative procedures more encouraging is the prevention of infection, the protection of the patient against the immediate and remote effects of sepsis and suppuration. The treatment of wounds with these objects in view has been simplified and rendered more efficient from year to year, but it can not be said that perfection has been reached. We are not yet in possession of an ideal absorbable ligature and suture material. There are surgeons to-day who do not take into account the possible failure of antiseptic and aseptic precautions in estimating the dangers incident to operative procedures. Have we not all heard so-called abdominal surgeons say that an exploratory laparotomy is devoid of danger? Is it not a fact that the abdomen is being opened daily by men who have not the faintest idea of what they may have to do, simply because they regard such a step as harmless and free of danger and the shortest and easiest way to make a diagnosis?

Acute Suppurative Osteomyelitis.—The early removal of the osteomyelitic product by operative interference as a rule relieves pain promptly, limits necrosis, guards against joint complications and minimises the danger from general sepsis.

Immobilisation of the affected limb in proper position and the exposure of the osteomyelitic focus by the use of the chisel or gouge as soon as a positive diagnosis can be made are the modern resources which have succeeded in greatly reducing the mortality of this disease as well as its immediate complications and remote consequences. There are, however, cases of acute osteomyelitis in which the earliest intervention of the art of surgery is powerless in preventing death from general sepsis. These are the cases of osteomyelitis in which simultaneously or in rapid succession a number of the long bones become involved and where the local signs and symptoms are overshadowed by the general symptoms which point to a progressive sepsis and which are so seldom favourably influenced by either local or general treatment.

Tuberculosis of Joints.—Only a few years ago the surgeons who paid special attention to diseases of the joints were enthusiastic advocates of early resection or arthrectomy in cases of tubercular joint affections. Typical resections were made regardless of the anatomical location or the extent of the disease. It was believed that such medical treatment would succeed in eliminating the local affection and in preventing the extension of the infection to distant organs by reinfection from the peripheral focus. Statistics prove that these hopes are unfounded and conscientious and thinking surgeons have substituted largely in place of operative treatment conservative measures. In large clinics where but a few years ago resection of joints for tuberculosis was a daily occurrence such operations are now rarely witnessed. This change in practice is largely due to the beneficial effects obtained from intra-articular and parenchymatous injections of iodoform glycerine injections. I have resorted to this treatment in hundreds of cases with the most satisfactory results. In about one-half or two-thirds of all cases of uncomplicated joint tuberculosis this treatment proves curative. It is of special value in the treatment of tubercular abscesses in communication with a tubercular joint or bone. From one to three or four injections usually suffice in obliterating the abscess cavity. The tapping and injection must be done under the strictest antiseptic precautions lest the operation will aggravate the case, perhaps render it hopeless by becoming the direct cause of a mixed infection with pus microbes. As some persons are peculiarly susceptible to the toxic action of iodoform the minimum dose, two drachms of a 10 per cent. emulsion, should be used in the beginning. In cases complicated by renal affections this caution should be increased, as any affection of the kidneys retards the elimination of the iodoform, and thus increases the danger from intoxication. The puncture must be made through normal

skin, if need be some distance from the abscess, and after removal of the canula it should be sealed with iodiform collodium and a small pledget of sterile cotton. Immobilisation of the limb or part thus treated is often useful but not always necessary. Iodoform is absolutely useless in the treatment of tubercular affections complicated by suppuration.

Malignant Tumours.—The imperfections of the art of surgery become very apparent in the treatment of far-advanced malignant disease of any part or organ The essential cause of carcinoma and sarcoma remains to be discovered. The treatment of unoperable sarcoma by injections of the sterilised toxins of the streptococcus of erysipelas and the bacillus prodigiosus has not filled the expected results. At the present time the surgeon's resources in the treatment of malignant tumours are largely limited to an early and thorough use of the knife. Every surgeon deplores the fact that, with the exception of carcinoma of the lip or of parts similarly exposed, the patients who apply to him for surgical treatment, with few exceptions, are suffering from malignant tumours which extend beyond the organ primarily affected, and have given rise to regional dissemination, general metastasis, or both. For instance, of the over 200 cases of carcinoma of the breast which have come under my own observation, I remember only one case in which, during the operation, the axillary glands were found unaffected, and in this case the columnar celled carcinoma, the size of a pea, had obstructed a duct, in consequence of which a retention cyst the size of a walnut developed, for which the patient applied for treatment. In cases of carcinoma of the uterus that come to me for examination and treatment, I find that only one out of every eight or ten cases is a proper case for a radical operation. In more than one-half of my cases of carcinoma of the rectum I refuse extirpation of the affected organ, and advise in its place an inguinal colostomy, because the disease has extended to the pelvic connective tissue, the retro-peritoneal lymphatic glands or adjacent organs. Of 18 cases of pyloric carcinoma of the stomach subjected to operative treatment, I found the disease limited to the part primarily affected only in one case; in the remaining cases the disease had extended invariably to the lymphatic glands, and in some of them to the adjacent organs, liver, gall-bladder, pancreas, omentum, and colon.

The conscientious surgeon looks as carefully for contra-indications as for indications for radical operations. He is concerned more for the welfare of his patient than his own selfish interests. Evidences of distant metastasis furnish a positive contra-indication to operative interference. Regional dissemination beyond the reach of complete removal of every vestige of tumour tissue, local and regional, without imminent

risk to life, constitutes an equally forcible argument against a radical operation. Large surface defects made by extensive radical operations should always be covered by a plastic operation or by Thiersch's method of skin-grafting.

Surgery of the Skull and Brain.—The art of surgery has its well-founded limits in the treatment of fractures of the skull. In my opinion, operative interference is absolutely indicated in fractures of the cranial vault under the following circumstances:—(1) All open fractures, including gunshot and punctured fractures; (2) depressed fractures attended by well-defined symptoms caused either by the depression or intra-cranial complications; (3) rupture of the middle meningeal artery with or without fracture of the skull. The use of the chisel or trephine is superfluous and often harmful in the treatment of subcutaneous fractures of the vault of the skull with or without depression, more especially in the case of children. The operation of trephining in the prevention of remote complications of fracture of the skull is often powerless, owing to the existence of visceral lesions which it can neither remove nor render harmless. Brain surgery is of recent origin. It is in this department of the operative work of the surgeon that art has gone far in advance of the science of surgery. Cerebral localisation and aseptic surgery have made it possible to treat a few intracranial lesions successfully by direct operative interference. Cerebral localisation is in its infancy, and the minutest aseptic precautions do not absolutely protect against infection. A few years ago the columns of the medical press brought glowing accounts of the removal of brain tumours. Patients were exhibited at the meetings of different medical societies with enormous cranial defects and ghastly depressions marking the place from whence a large glioma had been removed successfully. Such cases aroused the most intense attention and interest at the time, but where are they now? Subsequent reports failed to appear, and an ominous silence remains regarding their ultimate fate. Many of the cases of tumour of the brain operated upon who never recovered from the immediate effects of the operation were never reported, and those who were fortunate enough to survive the fearful ordeal, after a longer or shorter interval joined the silent majority. One of the well-defined limits of the art of surgery is the operative treatment of malignant tumours of the brain. Tapping and drainage of the lateral ventricles, as taught and practised by Dr. W. W. Keen, may and undoubtedly will become in the future a useful and legitimate surgical resource in the treatment of inflammatory affections of that part of the brain, but so far it has not yielded encouraging results. When Lannelongue devised linear craniotomy for the liberation of the

undeveloped imprisoned brain in the skull of infantile idiots, his doctrine was received with open arms by many surgeons who occupy the front rank in the profession. Where are the cases that have been permanently benefited by the operation? The operative removal of inflammatory products from the cranial cavity and the brain has yielded the most satisfactory results, and constitutes one of the most important achievements of modern surgery. This part of cerebral surgery will reach perfection with the progress of cerebral localisation, and should be encouraged and cultivated by all who are desirous of extending the present limits of the art of surgery.

Surgery of the Abdomen.—The bold surgery of to-day upon the organs of the abdominal cavity is largely due to the comparative safety with which the peritoneal cavity can be invaded under proper aseptic precautions. This new field for the display of surgical talent and ingenuity has been diligently cultivated in a legitimate way by the honest progressive surgeon, but it has also been made the playground of unscientific sensational surgery by men who are ignorant of the legitimate limits of the art of surgery. Notwithstanding the wonderful improvements in the technique of operations upon the stomach, partial gastrectomy and pyrolectomy have yielded anything but encouraging results. The legitimate limits of the art of surgery in the treatment of malignant disease of the stomach embrace the cases in which a sufficiently early diagnosis can be made when the malignant disease is limited to the organ primarily involved and the strength of the patient is adequate to overcome the immediate effects of the operation. The removal of the carcinomatous pylorus or any part of the stomach after the malignant disease has extended to adjacent organs or after regional infection through the lymphatic glands and channels has taken place is tampering with the present limits of the art of surgery. The palliative operations for carcinoma of the cardiac and pyloric extremities of the stomach have yielded excellent results, and should receive the sanction of every surgeon who has the best interests of his patients at heart. Witzel's operation for establishing an external gastric fistula in cases of malignant obstructive tumours at the cardiac orifice of the stomach, and Rockwitz-Wolfler's operation for pyloric carcinoma are the palliative operations which promise the most with the least immediate risks to life in all cases of malignant tumours of the stomach which give rise to obstruction. The treatment of intestinal obstruction by surgical intervention has become an established custom. Physicians and surgeons imbued with a proper moral and scientific sense, recognise the importance of early surgical interference in all cases of intestinal obstruction due to mechanical causes. Intestinal

surgery will celebrate its greatest triumphs with the progressive development of our diagnostic resources in the early recognition of the nature and location of the mechanical causes which give rise to intestinal obstruction. The custom followed by many American surgeons to remove the appendix in all cases in which a diagnosis of appendicitis is made, is a very harmful one. The removal of the appendix should be limited to those cases in which, during the first attack symptoms arise which portend danger to life and relapsing appendicitis. Some cases of appendicitis yield to medical treatment, and in a large percentage of such cases the patients remain free from a second attack. Much has been done of late in the way of developing and enlarging the sphere of the surgery of the liver and the biliary tracts. That unnecessary operations have been performed upon the gall bladder and the biliary ducts, no one will deny. The simple fact that a patient is suffering from gallstones does not furnish a positive indication for surgical interference.

Organs of Generation.—The greatest onslaught of modern surgery has been upon the organs of generation, male and female. Every competent and honest gynæcologist knows that in his sphere the art of surgery has been thoroughly abused. The uterus, which heretofore had been comparatively safe, was now selected as the offending body, and vaginal hysterectomy became at once a popular operation. Many atrophic uteri remaining after removal of their appendages have been removed in a vain hope of securing permanent relief. Vaginal hysterectomy for diseases other than carcinoma is now at its height. The clitoris, the vagina, the cervix uteri, the ovaries, the Fallopian tubes, the uterus and its ligaments have successively passed through a trying ordeal of the *furor operativus*. I cannot dismiss the subject of genital surgery without making a strong plea in favour of conservatism in the treatment of prostatic hypertrophy. What I fear, and the reason I allude to this subject is this, that castration of aged men for hypertrophy of the prostate, when this operation becomes common property and is endorsed by surgeons who stand high in the estimation of the profession, will be misapplied in the same way, fortunately, probably to a lesser extent than the removal of normal ovaries.—*Journal of the American Medical Association, May* 9, 1896.

NERVOUS SYSTEM.

71.—THE GENERAL AFTER-TREATMENT OF INJURIES OF THE CRANIUM.

By Chauncy Puzey, F.R.C.S., Surgeon, Northern Hospital, Liverpool.

[Abstract of a post-graduate lecture delivered at the Northern Hospital, May 15, 1896:]

It must be premised that, so far as any wound is concerned, that has been treated by one of the methods of modern asepticism; but for general antisepticism one of the first considerations is to clear out the digestive tract, and for that purpose nothing is better than the old-fashioned calomel purge. Whatever the nature of the injury, as soon as reaction has set in the intestinal tract should be cleared; and if the lower bowel is loaded, a stimulant purgative enema is of great use, for, as you all know, after concussion there is generally a tendency to torpor of the bowels. In this respect there is practically no difference between the old and the modern treatment. The bladder must be looked after, and, if necessary, the urine drawn off. If the temperature should run high, and the skin be very hot, and the patient be very thirsty, diaphoretics may be administered, and fresh lemonade or some cooling mineral water allowed, but nothing else.

In all the text-books on surgery it is enjoined that patients suffering from concussion and other severe injuries of the cranium should be kept on a mild or a low and unstimulating diet. Now this advice is not sufficiently definite; in fact, it is no more definite than it would be to say that the patient with a hæmatoma of the scalp had a swelling of the size of a potato or some other article of varying size. For many years past I have been laying down the law that, so far as my head cases are concerned, no milk shall be given except under orders; and year after year I have become more convinced that the nearer the dietary approaches starvation for some days after head injury, the more satisfactory will be the patient's progress towards recovery. The more severe the injury the longer the period necessary for starvation. Some of the apparently most hopeless cases of injury have had nothing but iced water or iced lemonade for a week, or even a day or two longer; and a reference to their temperature charts will show what a quiet, equable, uneventful, though perhaps slow, convalescence they have enjoyed.

After concussion of the brain, what is one of the first events which takes place? Vomiting. After severe nervous shock, either physical or mental, what most frequently occurs? Loss of appetite, nausea, even vomiting. Such is the intimate sympathy between the nervous system and the digestive system.

You must all have seen patients, half unconscious, with flushed faces and bloodshot eyes, with foul, furred tongue, with throbbing headache, either stertorously breathing, or tossing about unable to sleep. What used to be done for these cases? Formerly, bleeding, followed by ice to the head, sometimes emetics, always severe purging or mercurialisation. In later years, chloral, bromides, and other nerve sedatives; still more recently, morphia.

And I suppose that the treatment with chloral and bromide, and the administration of more or less of fluid diet, is still the custom, judging from the practice of house-surgeon after house-surgeon, coming to us from various medical schools in different parts of the kingdom. Two or three pints of milk, perhaps beef-tea or broth, and chloral and bromide of potassium; the result being a feverish, restless, troublesome patient. Stop everything—food and medicine—and very soon improvement takes place. The pulse becomes quieter, the face paler, the tongue cleaner, the breath cooler and less foul; and then the patient begins to doze and to sleep calmly, and so he will go on day after day, until at last he begins to feel hungry; but I let him feel hungry, and keep him without any food until he begins to crave for it and to beg for it; and even then only a small quantity, say from half a pint to one pint of milk (diluted with aqua calcis) or of chicken broth in the twenty-four hours. Then, from day to day, a very slight increase in the quantity is allowed.

I must admit that this treatment, though easily carried out in hospital, may not be so easily managed in private practice. In fact, without trained nurses who can be relied upon to faithfully, firmly, and intelligently carry out orders, it would often be difficult to contend against the prejudices and fancies of the patient's friends. Where it seems necessary to take consideration of the ideas of the relations, their feelings may be relieved by giving small quantities of barley-water, or of broth made with Brand's essence, which we now know does not contain much food.

I need hardly say that while this starvation treatment is being carried out, the pulse must be frequently and carefully watched, and if that indicates anything like dangerous weakness, the administration of food must be cautiously commenced. But this rarely occurs. As a rule, those who meet with these injuries *are in* good health; they have been injured while engaged in

active work or in sport of some kind, and they have a large reserve of vitality in them.

Now we will pass on to other details. I have already spoken of the necessity for clearing out the bowels to start with. After that, the patient being kept without food, the bowels may be left quiet But the condition of the bladder must be watched to make sure that distension does not take place, which may give rise to after complications. It may also give rise to trouble at the time, causing restlessness, which is at once subdued by the passage of a catheter. Later on, when the patient becomes more conscious, the full bladder will rouse the patient to a sense of requiring relief, which he seeks automatically. In some cases, especially where brain has been lacerated, small doses of morphia subcutaneously are very useful. With regard to local treatment I need say little, I suppose. It is of course understood that the head should be kept as cool as possible by shaving or cutting the hair short, and probably by evaporating lotions or by ice; it should also be rested on a hard pillow, and is best kept well raised. And of course the room should be kept darkened.

Well, now I must say something as to treatment of threatened meningitis, though it is so rarely that we now meet with anything of the sort that I am quite out of practice in the treatment of such cases, fortunately. The head should at once be completely shaved, and if the pulse should be full leeches may be freely applied, and when as much blood as seems advisable has been drawn, the ice-cap or cold-water coil should be applied. Morphia will probably be found of benefit, the bowels having been previously as thoroughly as possible cleared out. With regard to the use of mercury in these cases, opinion differs much, and I cannot say that I have seen any good results from its continued use.

As concerns operative treatment, which may in due course be indicated, that does not come within the limit of my subject, which is that of the general after-treatment of head injuries.

I would now call your attention to some temperature charts which illustrate at a glance the equable course which is to be hoped for, and which is now obtained in the majority of our severest cases of head injury; and for contrast I show the charts of some cases which terminated fatally, without operation, the cases apparently being beyond the reach of surgical aid, and I feel sure, as a result of long experience, that several of those whose temperature I have shown you running such an even course would, only a very few years ago, have shown the high temperature and fatal results which you have just seen in the minority of cases.—*The Liverpool Medico-Chirurgical Journal, July*, 1896.

72.—CEREBELLAR ABSCESS.

By Theo. D. Acland, M.D., and Chas. A. Ballance, M.S.

[Dr. Acland and Mr. Ballance record a case secondary to ear disease successfully treated. They then give an elaborate account and analysis of the reported cases. We have only been able to reproduce a very small part of their excellent paper.]

Non-localising Symptoms of Abscess of Brain.—In many cases of abscess of the cerebellum the symptoms are of no value in localisation. Among these may be mentioned headache, vertigo, photophobia, purposeless vomiting, optic neuritis, low temperature, slow pulse, slow respiration, drowsiness, foul breath, constipation, loss of control over the bladder, emaciation, pallor of face, and expressionless countenance, following, as is usually the case, on long-continued otorrhœa, and with a history of sudden onset of illness, with earache, and sometimes shivering.

Localising Symptoms of Abscess of Cerebellar Hemisphere.—Gowers mentions as localising signs of cerebellar abscess frequent vomiting, severe occipital headache, marked giddiness, and cerebellar inco-ordination in consequence of pressure on the middle lobe. In the case under discussion other symptoms were present, which so closely resemble the effects produced by removal of one lateral lobe of the cerebellum that they deserve to be fully considered. The most important of these are paresis of the anterior extremity on the same side as the cerebellar lesion, associated with weakness of the lower extremities, increased knee-jerk on the same side as the lesion, and conjugate deviation of the eyes away from the lesion.

(1) Paralysis of Limbs.—The paralysis of the anterior extremity on the same side as the cerebellar lesion has been explained in various ways.

(2) Muscular rigidity or convulsions may affect the limbs on the same side as the cerebellar lesion.

(3) Conjugate deviation of the eyes to opposite side.—In one case, observed by us at St. Thomas's Hospital, in an early stage of the illness there was deficient movement of both eyes towards the left. In a later stage there was extreme conjugate deviation of the eyes to the right. At the autopsy two abscess cavities were found in the left lobe of the cerebellum; they had both been opened and drained during life.

(4) Lateral nystagmus often seems associated (clinically and experimentally) with lesions of the lateral lobe of the cerebellum, while rotatory nystagmus points to involvement of the middle lobe.

(5) The tendon reflexes. Discussion as to the site of abscess when the type paralysis is present.—The knee-jerk on the same side as the cerebellar lesion is exaggerated.

(6) Rotation.—A tendency to face towards the side of the lesion in walking.

(7) Staggering or cerebellar gait, and a tendency to fall towards the side opposite to the lesion.

(8) Attitude assumed by patient in bed.—A tendency to lie curled up in bed on the side opposite the lesion, with the limbs flexed, and the side of face corresponding to the lesion uppermost.

(9) No loss of sensation.

Treatment.—The site for trephining and the search for the abscess.—A cerebellar abscess arising from ear disease is usually in the anterior part of the lateral lobe, close to the bone disease (inner side of mastoid or posterior surface of petrous) which has caused the infection. The trephine should be placed so that its anterior border is just behind the posterior border of the mastoid process, and so that its upper border is below Reid's base line. In this way the trephine is behind the vertical portion and below the horizontal part of the sinus. After the dura is opened the trocar or pus-seeker should be passed forwards, upwards, and inwards, through the cerebellum in the direction of the posterior surface of the petrous bone. Thus an abscess situated in the anterior and outer part of the hemisphere will be evacuated. If the abscess is in the anterior and inner part of the lobe the cannula will have to travel quite two inches inward from the surface before pus is struck. It is probable that in many instances an abscess has not been opened, and the patient's life lost, because the surgeon has hesitated to plunge the cannula in far enough. In abscess of the flocculus pus will have to be found still more deeply. When a very large abscess is present its discovery and evacuation will not be difficult. When a second abscess forms it should be looked for on the inner side of the first or posterior to it.

Return of symptoms after evacuation of the abscess.—From the records of cases before us, and from our own experience, it is clear that this event is by no means uncommon, even when the patient is apparently convalescent a few days or two or three weeks after the operation. This is due either to the (1) refilling of the old cavity from faulty drainage, or (2) to the formation of a new abscess in another part of the same lobe.

Irrigation and drainage of the abscess.—If the abscess is not large the drainage may be by a decalcified bone tube, but if the abscess is large such drainage will possibly be inefficient, and therefore dangerous, and a rubber or silver tube must be used. As to irrigation, a small cavity deeply situated should not be irrigated, but a large cavity may be safely and effectually washed out by the use of a small tube for the entering fluid and a large one for the exit tube.

Absence of signs of inflammation over the mastoid; absence of discharge from, or pain in, the ear; an inodorous discharge.—None of these negative indications ought to mask the possibility of the symptoms of the patient being due to intracranial disease.

Danger of delay in operating.—As soon as an abscess in the brain has been diagnosed, even if it cannot be precisely localised, no delay in operating is justifiable. This is especially the case in abscess of the cerebellum, since death may occur suddenly from pressure on the respiratory centre. We know of more than one case in which, operation having been arranged for the next day, the patient died in the night. Further, if the natural breathing ceases during operation, artificial respiration must be carried on while the operation is continued, the cerebellar abscess opened, pressure thus relieved, and natural breathing restored. Another reason for not delaying operation is the risk there is that the abscess may burst into a ventricle, making recovery almost hopeless. When this occurs the temperature rises, the pulse and respiration quicken, and the patient soon dies.

Four facts stand out prominently in the record of cases that have been published, as far as we have been able to trace them. (1) That every case of cerebellar abscess not operated upon has proved fatal, and that up to the year 1886 no successful case of operation has been reported. Since that time 10 (? 11) cases have recovered after operation, while 16 others have died after operation. These numbers do not accurately represent the percentage of success after operation, since it is within our knowledge that many fatal cases have not been published; but they serve to show that cerebellar abscess may be successfully treated.

(2) That an overwhelming proportion of all cases of cerebellar abscess are secondary to disease of the ear, the most frequent exceptions being those which are due to pyæmia or mechanical injury. From this it follows—

(3) That, given a brain abscess secondary to ear disease without pyæmia, it will almost certainly be situated either in the cerebellum or in the temporo-sphenoidal lobe, and if the ear disease is unilateral the abscess will be on the same side. These facts are of immense practical importance.

(4) That if paralysis occurs directly as the result of abscess of the cerebellum it will probably be on the side of the lesion. The two exceptions to this rule are both recorded by Andral, and they have both been inserted in our list, though it may be doubted whether the cerebellar lesion was due to ear disease. Andral mentions altogether three cases of cerebellar abscess in which paresis was observed; in one there was loss of power on the same side as the abscess, in a second on the opposite side,

while in the third there was first loss of power in the lower limbs, and later in the upper ones. In this case there were abscesses on both sides.—*St. Thomas's Hospital Report*, 1896, *p.* 133.

ALIMENTARY CANAL.

73.—THE USE OF SKIAGRAPHY FOR THE DETECTION AND LOCATION OF FOREIGN BODIES IMPACTED IN THE ŒSOPHAGUS.

By Dr. J. William White.

[The following is taken from an editorial in the *Annals of Surgery*, August, 1896. It illustrates the practical value of the new photography.]

On May 12, 1896, Annie ———, a patient of Dr. Taubel's, of Philadelphia, aged 2 years and 5 months, began to complain of pain in swallowing and to reject food. Milk and water were taken reluctantly, but solids and semi-solids were obstinately refused, or, if swallowed, were vomited after a few minutes. No positive explanation of these symptoms was known, but it was found that one of a set of "jack-stones" with which the child had been playing was missing. Various forms of treatment were employed for twelve days, and on Friday, May 22, the child was brought to me at the University Hospital. She was in fairly good condition, but had a temperature of 100° to 101° F., a pulse of 130, and was beginning to show the effects of semi-starvation. I at once made arrangements to have a skiagraph of the thoracic region taken by Professor Goodspeed. This was done on May 23. The exposure was for three minutes. The child's arms were held up. The plate was fastened to her back. The result was most satisfactory. The "jack-stone" could be seen a little to the left of the middle line, apparently on a level with the space between the second and third dorsal spines—*i.e.*, a little above the bifurcation of the trachea. Its peculiar shape and its absolute opacity to the rays made it a very striking and easily identified object in the picture.

The diagnosis being thus assured, after a preliminary attempt to reach the body with various forms of œsophageal forceps had failed, it was determined to do a gastrotomy. The abdomen was opened in the middle line above the umbilicus, the stomach drawn out, the general peritoneal cavity excluded by pads, and

an incision made through the stomach wall a little to the right of the splenic end and about midway between the upper and lower borders. A finger introduced soon found the cardiac orifice; a slender flexible œsophageal explorer carrying a stout silk thread three feet in length was then pushed downward through the pharynx, and with some difficulty was made to pass the obstruction and enter the stomach. One end of the thread was then hooked out of the wound, and the instrument was withdrawn, leaving the other end hanging out of the mouth. Pledgets of gauze of various shapes and sizes were then firmly knotted to the thread, and were drawn upward or downward, most of them being firmly arrested at the point of obstruction, some of them passing through between the bars or spokes of the "jack-stone," but leaving it unmoved. In a few minutes, however, a piece of gauze brought the latter with it into the stomach, from which it was readily extracted. A continuous catgut suture of the mucous membrane and a continuous silk Lembert suture through the peritoneal and muscular coats, inverting the wound, completed the operation, which, including the final closure of the abdominal section, occupied a little less than half an hour. The child made a rapid and uncomplicated recovery.

There is not much to add to this brief account of a case which acquires especial interest from probably having been the first in which the skiagraph has been used in this particular manner. I may, however, call attention to its advantages:—(1) In diagnosis, (2) in locating the foreign body, (3) in selecting the form of treatment.

(1) The diagnosis in these cases has hitherto necessarily been made on the history, the subjective symptoms, and the recognition of the foreign body upon instrumental exploration. The history in large classes of patients is either altogether lacking or is untrustworthy. It is obvious that in very young children and in intoxicated persons itcannot usually be obtained; and that in lunatics and hysterical patients it is apt to be unreliable or positively misleading. But outside of these examples there are on record many curious instances of reasonable doubt as to the history of such cases. Anxious parents and nurses have often convinced themselves and the medical attendant that some article which has disappeared must have been swallowed by a child; mischievous children have pretended to have symptoms resulting from the presence in the throat or stomach of a foreign body, which they have described in much detail, but which did not exist; even very intelligent patients have found themselves in circumstances which strongly suggested an accident of this character, but which neither proved nor disproved it. It is obvious that when

the intruding body has sufficient density to cast a definite shadow there will be many cases in which the mere proof of its presence will be of great value.

(2) The exact location of a foreign body can be determined more precisely by this method than by the most careful measurements with flexible instruments. The latter may bend or curve within the œsophagus, and thus give the impression of greater penetration and of a lower level of obstruction than actually exists. On the other hand, œsophageal spasm or inflammatory swelling may stop a bougie or other explorer some inches above the position of the foreign body. By comparison with the ribs and the vertebræ the precise level of the foreign body, the relation to the bronchi, the great blood-vessels, and other important structures may be most accurately determined by the skiagraph, and both the dangers and the uncertainties of ordinary exploration may be avoided.

(3) As to the choice of method, it was, of course, apparent in this case that, if extraction by forceps was not promptly and easily accomplished, the "jack-stone" would have to be removed either by means of an œsophagotomy or a gastrotomy. Propulsion of an irregular body of that sort, which had been impacted for twelve days, was scarcely to be thought of. At first sight of the skiagraph œsophagotomy was suggested by the proximity of the "jack-stone" to the upper level of the sternum, but an examination of the short fat neck of the little patient showed that if the body were at all fixed it would be most difficult to dislodge it through the largest wound that could safely be made. Terrier long ago excluded from the cases to which œsophagotomy was applicable all those in which the foreign bodies were situated in the thoracic portion of the canal, and, as a matter of fact this is still a good working rule.

If it is of recent introduction and of regular shape, the foreign body in the thoracic œsophagus, though inaccessible from the mouth, may be reached by forceps through an œsophageal opening and extracted. But if it has occupied that portion of the canal for any length of time, and particularly if it is of distinctly irregular shape and of some size, offering an opportunity for firm impaction, it seems far better to make the original effort through the stomach, so as definitely to dispense as much as possible with instrumentation in the already inflamed and probably ulcerated œsophagus.

The peculiar shape of the foreign body in this case facilitated the passage of the flexible explorer from the pharynx to the stomach. Even if the œsophagus were completely filled, however, it would be safer and easier to dislodge the intruder by alternate pressure upward through the cardiac orifice and downward through the pharynx, than to trust to either

extraction or propulsion through a wound in the neck. It was made evident by the skiagraph that the "jack-stone" had passed the narrowing of the œsophagus opposite the cricoid cartilage, and had been arrested above the level of the transverse aorta and left bronchus, each of which sometimes grooves the œsophagus slightly at the point of contact. It was therefore peculiarly dangerous to attempt with any force to push it downward, as perforation of either of those structures would have been a possible, perhaps after twelve days' œsophagitis a probable, result. Between the position of the foreign body and the lowest opening that could be made in the cervical portion of the œsophagus was a considerable interval through which, in a neck as short and stout as this one, little or nothing could be done with the fingers, and which is crowded with important vessels and nerves in close proximity to the canal itself. I am aware that a few cases of œsophagotomy have been done for foreign bodies said to be about on a level with the top of the sternum (Syme, Cheever), but they are very few. In Syme's case the body was a copper coin, which gave rise to no obstruction; in Cheever's it was a brass pin, and a long probang passed without obstruction. In the latter case the operation was done on the third day.

On the whole, as I have said, thanks to the very definite information given by the skiagraph, it was not difficult to decide in favour of gastrotomy. The impossibility of moving the "jack-stone" in an upward direction by the means employed during the operation made the choice seem fortunate.

I have been much impressed by the practical importance of the Rœntgen ray process in surgery, but in no instance more than in this, where, in a case in which every hour had become valuable and every effort at exploration dangerous, it substituted accuracy and promptness for otherwise unavoidable uncertainty and delay.

74.—BULLET WOUND OF THE PERITONEAL CAVITY.

By Dr. L. M. Tiffany.

[The following abstract is by Mr. W. P. Montgomery, and appears in the *Medical Chronicle*, June, 1896:]

The author records four cases, three of which recovered, of abdominal section for penetrating wounds of the peritoneal cavity. In each instance the bowel was injured, and twice the ball lodged in the gut, penetrating one wall and not going through the other. In the other two cases the ball was not found, lodging probably in the soft parts around, but no harm resulted from such lodgment. Had a large vessel been wounded,

as an iliac artery or vein, evidence of the existence of such a wound would, of course, have called attention to the presence of the bullet. In the absence, therefore, of any symptom pointing directly to the lodgment of the ball, after the intestinal wounds had been attended to, no further search was made, and no harm resulted.

The most remarkable point is that, save in one case, there were no symptoms, when first seen, indicating wound of the abdominal viscera. In this exceptional instance there was some pain on pressure, and very marked rigidity of the abdominal muscles. There existed eight perforations of the small intestine. In this case it may be that extravasation from the bowel into the peritoneal cavity had to do with the amount of pain on pressure and the abdominal rigidity. No case showed blood, or fæces, or gas making exit from the bullet wound. Temperature, pulse, and respiration were unchanged. Indeed the most noticeable thing, when looked at after operation, was that there was nothing to indicate the amount of the intra-peritoneal lesion until the abdomen was freely opened. This fact has been repeatedly referred to by writers, and is justified by the present series of cases. In each instance, with one exception above mentioned, the withholding of operation until definite symptoms of injury to the abdominal viscera declared themselves, would have meant fatal delay. In one case, previously recorded, there were fourteen perforations of the small intestine. Yet the man had a pulse of 66, full and good, and presented no symptoms whatever of shock. On the other hand, during and after operation, collapse was very marked, and the temperature in one instance was under 95°. Then flushing the peritoneal cavity with hot water always produced a most excellent effect on the pulse, which not only increased in volume and force, but diminished in frequency.

It is important that the wound of entrance should be explored by incision, not merely because by this means we can make certain that the peritoneal cavity itself has been opened, but also we may be able to discover wounds of the colon, affecting its non-peritoneal surface, which would not be evident on abdominal section alone. In one of the cases recorded by the author, such a wound was overlooked through want of this precaution.

Hemorrhage from the liver in one case was arrested by gauze-packing, which proved quite as efficient as deep suturing, and afforded an exit for the bile, which subsequently flowed in great quantity.

In all the cases of wound of the gut Lembert's suture was used, and the stitches were so placed as to make the scar transverse to the long diameter of the bowel. Distension of

the gut did not, therefore, tend to separate the wound-edges or cause the sutures to tear out. Food after operation was withheld, and ice alone given for twenty-four or forty-eight hours. The author recommends free saline purgation after operation, unless there is reason to suspect an unclosed intestinal wound. Then opium is indicated.

The conclusions come to are:—(1) A penetrating wound of the peritoneal cavity is not accompanied by symptoms commensurate with the extent of the injury. Fatal lesions may exist, yet shock be wanting. (2) The wound of entrance should be enlarged, and, if the missile has entered the abdomen, a section is called for. (3) Operation is proper soon after the injury, before the peritoneum has become infected, or much blood lost. (4) Flushing the open peritoneal cavity with hot water is an excellent stimulant to the heart. (5) Whenever practicable drainage of the abdominal wound should be avoided.—*American Journal of the Medical Sciences, May*, 1896.

75.—THE SURGERY OF THE SUBPERITONEAL TISSUE.

By WILLIAM ANDERSON, F.R.C.S., Surgeon to St. Thomas's Hospital.

[The following is taken from Mr. Anderson's paper, read before the British Medical Association Meeting, 1896:]

The subjoined classification of subperitoneal diseases as a whole may help to guide discussion:—

Inflammations.—Classified according to etiology—(1) Idiopathic, (2) tuberculous, (3) syphilitic, (4) metastatic, (5) traumatic, (6) consecutive, of parietal, peritoneal, visceral, lymphatic, or remote origin. Classified according to locality—(1) Retro-peritoneal (including mesocolic-mesenteric, &c.), (2) subphrenic, (3) perinephric, (4) iliac, (5) pelvic (including parametric), (6) prevesical.

Neoplasms.—Primary: (1) Lipoma and fibrolipoma—(*a*) Retro-peritoneal (may become mesenteric, mesocolic, omental, or parametric); (*b*) hernial, through inguinal, femoral or obturator openings, through the linea alba, and in other situations; (*c*) intra-peritoneal, after the manner of appendices epiploicæ. (2) Fibroma. (3) Myoma and fibromyoma. (4) Sarcoma. (5) Cysts, simple, hydatid, dermoid, &c. *Secondary:* Carcinoma or sarcoma conveyed by lympathics or blood vessels.

Hemorrhages.—From rupture of healthy or diseased vessels.

Lymph Exudations.—From injury or disease of the receptaculum chyli, or its tributaries.

Extravasation of Secretions or Excretions.—Bile, fæces, &c.

Gaseous Infiltrations.—Air from communication with lung. Intestinal gases from perforation of gut. Gases of decomposition.

Atrophy.—Leading to displacement of organs—as in movable kidney, hernia, &c.

Subperitoneal Cellulitis.—The subject of inflammation of the subperitoneal tissue is a very wide one. Its literature has always been dispersed under various regional headings, such as retro-peritoneal, subphrenic, perinephric, iliac, or pelvic cellulitis, and we may even find an elaborately subdivided section devoted to the inflammation of the cavum Retzii.

The cases of subperitoneal cellulitis may be conveniently grouped under the headings named in the table of classification. The idiopathic forms, found chiefly in subjects with a tuberculous history, may be passed over briefly. They resemble the "cold abscesses" of an older pathology and may disappear spontaneously or be quickly and permanently relieved by the surgeon. It is probable that many of the so-called idiopathic cases are due to slight and forgotten injuries.

The tuberculous, syphilitic, and metastatic forms, too, need not delay us, as the subperitoneal tissue merely shares the danger with other connective tissue planes in the body; but the traumatic form is far more frequent and important. Setting aside the cases in which a simple contusion is the only apparent cause—and according to Halle a contusion of the lumbar region is a frequent cause of perinephric abscess—the condition of particular interest to us is that which occurs after operations involving division of the structures of the abdominal wall, as well as certain others, such as herniotomy, castration, or ligature of a varicocele, which do not come under the heading of abdominal or lumbar section. In any of these procedures an accidental infection may lead to widepread implication of the subperitoneal planes.

These peritoneal suppurations, however, are seldom dangerous or even tedious in the present day. If the usual precautions have been taken, and suppuration follow, it is nearly always of a very benign type. The patient may show no disturbance of health or temperature, and it is only perhaps at the end of a week when the dressings are removed that the abscess is found distending the line of suture. The pus when set free is usually inodorous, and the cavity closes rapidly and permanently.

The consecutive form is that which affords the largest material for consideration. It may arise from a multitude of sources from disease in the parietes, especially the spinal and pelvic bones and joints; in the peritoneum; in any of the abdominal or pelvic viscera; in the lymph glands within the planes of the tissue itself; and in regions altogether outside

the abdomen. To deal separately with all the causes named would trench upon the territories of a dozen specialties, and occupy a vast amount of time. There are, however, a few generalisations that may be safely and briefly expressed:—

First—A subperitoneal cellulitis may originate in any part of the abdomen and pelvis, and from any of the structures, parietal, visceral, or other, related to the subperitoneal tissue.

Second—While a cellulitis of parietal origin, as from disease of the vertebræ or pelvic bones involves the subperitoneal tissue directly; an inflammation of visceral origin may reach the tissue in three ways—by direct continuity at a point where the viscus is uncovered with peritoneum (and we have seen that some portion of every viscus is in more or less direct relation to the subperitoneal tissue); by a perforation of the subperitoneal space at a point of inflammatory adhesion between the visceral and parietal peritoneum; or by a necrosis of peritoneum through long contact with pus in a localised intra-peritoneal abscess. As pointed out by Dr. Hawkins, the transperitoneal modes of infection are the almost invariable cause of cellulitis secondary to appendicitis, and the same has been shown by Dr. Cullingworth to be the case in ovarian and tubal inflammations.

Third—Whatever its origin, it may spread by continuity and invade any portion of the tissue, showing itself in the iliac, perinephric, subphrenic, or any other region, usually remaining confined to the side of the body on which it began, but sometimes appearing in the middle line, or crossing to the opposite side.

Fourth—A subperitoneal abscess tends to find its way to the surface of the body, seldom opening into the peritoneal cavity, and very rarely into a viscus. A localised intra-peritoneal abscess, on the other hand is prone to discharge into any visceral cavity against which it lies. This has been confirmed in pelvic suppuration by Dr. Cullingworth, and holds good in other regions.

Fifth—A cellulitis beginning in the subperitoneal tissue may travel away from the abdominal cavity in four chief directions —outwards to the surface of the trunk (abdomen or loins), downwards towards the pelvic outlets and lower extremities, inwards into the peritoneal cavity, and upwards into the thorax.

Finally, in a central direction it may break into the peritoneal cavity, or, in rare instances, into a viscus.

New Growths.—The primary subperitoneal tumours have been enumerated as lipomata, fibromata, myomata, sarcomata, and cysts. The tissue may also be invaded by certain growths—fibromata, &c., originating in the parietes, and by primary or secondary neoplasms in the lymph glands.

Lipoma.—The lipomata have considerable surgical interest owing to the enormous size which they may reach, and to the difficulty of diagnosing their nature before operation. They may be subdivided clinically into certain varieties:—(1) Those which remain confined to the subperitoneal space, such as the retro-peritoneal, mesenteric, omental, and parametric growths, which nearly all originate retro-peritoneally; (2) those which escape through weak points in the parietes, forming fatty hernias; and (3) those which grow into the peritoneal cavity like the normal appendices epiploicæ.

The remaining solid tumours are fibromata, myomata, and sarcomata, besides certain growths of doubtful nature (probably sarcomatous), which have been described by Spencer Wells, Knowsley Thornton, Lockwood, and others. Two primary "encephaloid" retro-peritoneal tumours, probably soft sarcomata, are also recorded by Péan. In addition to these, various growths originating in the retro-peritoneal lymphatic glands—lymphomata, syphilomata, as well as secondary sarcomata and carcinomata are well known.

Sarcomata are rare. The sarcomata, however originating, may be insusceptible of removal on account of their size and imperfect definition. The attempt may be rapidly fatal, as in Péan's case, but more commonly the abdomen has been closed after simple exploration. The diagnosis can rarely be more than a surmise before operation, but the interference with the abdominal circulation, as shown by enormous dilation of the superficial veins, appears to be greater than in other tumours.

The cysts of the subperitoneal tissue are nearly all developed from fœtal relics. Dermoids, probably of ovarian origin, have been found in the broad ligaments. The duct of Gartner, and remains of the Wolffian body in the female are responsible for other cystic formations, and the presacral dermoids probably spring from the remains of the postanal gut. Hydatid cysts have been found in the subperitoneal tissue as elsewhere. A case has lately been recorded by Dr. Peter Thompson in which one, of the size of an orange, was found.

It remains only to allude to the final sections in the classification. Hemorrhage may arise from rupture of healthy vessels by accidental injury, such as those attending fractures of the pelvis, from the tearing of vascular structures, such as the round ligament, during parturition, or in other ways; or from the giving way of diseased arteries, atheromatous or aneurismal, or of varicose veins. The blood poured out into the subperitoneal spaces may become circumscribed, or may spread diffusely along the connective tissue planes, following the courses already indicated, and the recognition of the condition may offer great difficulty. The diagnosis of hæmatoma of the broad ligament

is a problem which the gynæcologist is often called upon to solve. Perinephric hæmatoma may closely resemble a hydronephrosis or circumscribed extravasation of urine. An effusion of blood into the cavum Retzii often simulates an over-distended bladder or a collection of urine from extra-peritoneal or even intra-peritoneal rupture of the viscus. Extravasation or exudations of lymph have not yet been described as such, but they may occur from injury to the retro-peritoneal lymphatics or from obstruction, and it is possible that some of the serous cysts found in the neighbourhood of the kidney are due to a dilatation of lymph spaces.

The extravasation of secretions and excretions—for example, urine, bile, and fæces—is occasionally set up by accident or disease; it sooner or later excites inflammation, and the condition becomes merged into that of cellulitis. Gaseous accumulations may arise in two principal ways. The gas may be air derived from a communication with the lung, as when a pulmonary abscess finds its way through the diaphragm, or in complicated fracture of the ribs; or from a communication with the intestinal canal, as in appendicitis with perforation; or from decomposition of pus.

Many cases of gaseous abscess of the abdominal wall have been reported, and some of these have been traced to their origin in connection with some part of the intestinal canal, but others have been difficult to explain.

Atrophy of the subperitoneal tissue may be induced by tight lacing and deficient exercise in women, by repeated pregnancies or by exhausting disease, and appears to be intimately associated with the pathology of movable kidney. The ballooning of the rectal ampulla most frequently met with in emaciated women is probably due to atrophy of the subperitoneal fat connective tissue in the pelvis.

The lowering of the mesenteric attachment after middle age, noticed by Mr. Lockwood, as favouring the occurrence of hernia, is partly due to a diminished sustentacular power in the subperitoneal tissue, and partly perhaps to the accumulation of the retro-peritoneal fat, but must be regarded as in some sense degenerative.—*British Medical Journal, October* 17, 1896.

76.—THE SURGICAL TREATMENT OF PERFORATING ULCER OF THE STOMACH.

[The following is taken from a summary given by Mr. W. H. Harsant in the *Bristol Medico-Chirurgical Journal, October*, 1896. See also *Synopsis* of this volume.]

Dr. R. F. Weir and Dr. E. M. Foote, of New York, give an able summary (*Med. News*, 1896, lxviii. 449) of recent

advances in this branch of surgery. The first successful case reported was by Kriege (*Berl. klin. Wchnschr.*, 1892, xxix. 1280), and since that time the surgical treatment of perforating gastric ulcer has widely spread, particularly in great Britain, so that now the collection of such operations has attained a total of 77 cases, obtained from American, English, German, and French periodicals. Five-sixths of the 78 cases occurred in women, three-fourths of whom were not above 25 years of age. With regard to the site of the perforation, it occurred forty-three times in the anterior wall, eleven times in the posterior wall, and six times in the lesser curvature. In 27 cases the perforation was said to be near the cardiac orifice, and only nine times near the pylorus. The most important point in this connection is the accessibility of the perforation, and when we look over the tables with that idea in mind we find that in the large majority of cases it could be reached and sutured. In only 8 cases is it stated that a suture of the perforation was impossible, either from its location, or the condition of the stomach-wall or that of the patient. This is by no means a bad record; on the contrary, it is an encouraging one. In 16 cases the perforation was not found. In two of these it was considered unwise to separate adhesions between stomach and liver to look for it—a fatal caution. In several other cases the real cause of the peritonitis was not suspected, and in nearly every case, as the necropsies showed, the lesion was readily accessible to discovery and suture had a reasonably diligent search been made. In justice be it said, however, that many of these cases occurred in the earlier days of this still new operation, and the operators had not the experience of others as their guide; also that the serious condition of the patient often limited the duration of a proper exploration.

An interesting point in connection with the surgical treatment of a gastric ulcer is the time which elapsed between the perforation and the operation done for its relief. It seems an invariable rule that perforation is attended with an attack of sharp abdominal pain, so that the time of perforation can usually be determined. The average time which elapsed before operation was thirty-six hours; but the extremes being so far apart as two hours and three hundred and thirty-six hours, the average has little value. It is more instructive to notice that in 21 cases which recovered the elapsed time averaged nineteen hours, while in two-thirds of these cases it was less than twelve hours. In the 55 unsuccessful cases the elapsed time averaged forty-three hours, and over twenty-four hours in two-thirds of these cases. It requires, therefore, no discussion to prove how much better is the chance of recovery when a perforation has existed ten hours than when it has existed twenty hours or

more; and when a more certain diagnosis brings the patient sooner to the operating table, the percentage of recovery, which in the cases recorded up to date is about 29 per cent., will doubtless be improved.

The secret of success lies in early diagnosis. There is almost invariably a history of gastric trouble, though not necessarily a well-marked history of gastric ulcer. There is an attack of sharp pain referred usually to the epigastric or left hypochondriac region, followed sometimes by pain in the lower abdomen. The pain is at first intense often producing collapse or unconsciousness; usually it quickly moderates. Vomiting may or may not be present. Vomiting of blood is very unusual. In one case hæmatemesis had been present for many days; but although the vomiting continued after the perforation, it was without blood. After some hours, the time varying according to the amount and character of the escaped gastric contents, the symptoms of peritonitis manifest themselves. The physical examination of the patient is of great importance. In the earliest stage of the trouble the pallor, the anxious countenance, the feeble pulse, the thoracic respiration and the rigid abdomen, all point to the injury to the peritoneum. If gas has escaped from the stomach, or has developed by fermentation of the escaped gastric contents, the hepatic and splenic dulness may be reduced in area, or wholly disappear. It is evident that this condition might also follow intestinal perforation. But when the abdomen is opened the distinction between the two is plain, for the gas from the stomach is without odour, or slightly sour, while that from the intestines has a fæcal odour. As regards the operation itself, a median incision is the best, and should be of ample length, from three to five inches. The liver is to be lifted up by the hand of an assistant, and the stomach gently drawn downward and to one or the other side. Gentle squeezing of the organ will often expose the perforation by the escape of gas or fluid. If nothing is seen on the anterior surface, the lesser omentum is to be torn through at a thin place near the stomach, and the posterior wall explored as much as possible. With the aid of a sponge on a clamp through this same opening, the recesses of this cavity can be reached to search for extravasated fluid. If any recent adhesions exist about the perforation it is wiser to separate them, after protecting as far as possible the adjacent parts by gauze or sponges, and thus to find and to suture the gap, than to trust to the fibrinous closure. Excision of the ulcer has been advocated by some. On the other hand, it has been objected with much reason, that this is unnecessary, that it takes valuable time, that it makes a larger and more difficult opening to close, *and that* hemorrhage follows, which is very detrimental to the

patient, and is often troublesome to check. In only three of the 23 successful cases was the ulcer excised. Of the remaining 20, seventeen were sutured, Lembert style, while two of the others were tamponed, suture being impossible, and in the other case the fibrinous adhesions were not disturbed. In 12 of the successful cases irrigation of the peritoneal cavity was resorted to. In eight cases no irrigation was employed, but the peritoneum, when soiled, was cleansed with gauze. Five successful cases were drained; in 10 no drainage was employed.

Dr. Alexis Thomson records a successful operation for perforating ulcer of stomach some twenty-four hours after the first symptoms developed. The patient was a man, aged 41, who had suffered from symptoms of gastric ulcer for five or six months. The perforation was attended with the usual attack of pain in the region of the umbilicus, vomiting and collapse. On opening the abdomen a circular hole was recognised on the anterior wall of the stomach, nearer the lesser than the greater curvature, and nearer the cardia than the pylorus. The hole was the size of a threepenny piece, and from it there escaped with each inspiration gushes of stomach fluid contents. While the fluid was soaked up with sponges a tube was passed down the œsophagus, and the remaining contents of the stomach were withdrawn. The walls of the stomach were then brought together with eight Lembert silk sutures. The peritoneal cavity was well washed out, and a drainage-tube inserted, through which the fluid was sucked out every quarter of an hour for the first twenty-four hours. Four months after the operation the patient was strong and well. Dr. Alexis Thomson agrees with Mr. Pearce Gould that excision of the ulcer or paring of its edges is to be avoided. He recommends that a considerable area of stomach wall should be invaginated and that free washing out of the peritoneal cavity with hot saline solution or boiled water should be practised in all cases.

Dr. R. A. Lundie, in January, 1895, showed a patient at the Edinburgh Medico-Chirurgical Society upom whom a successful operation had been performed for perforation of a gastric ulcer. The patient was a dressmaker, aged 24, who had suffered from severe indigestion for about two years. The chief symptoms were pain, generally coming on an hour or less after taking food, and vomiting, which relieved the pain. No blood was ever vomited, so far as had been observed. For two months the symptoms had been severe and continuous. On October 17, 1894, while at work in the afternoon, she had a particularly sharp pain "at the bottom of the ribs" on the left side. It left her during the night, only to return the next day when she was on her way to work. In the afternoon and evening she

remained at home and applied poultices, which, she thought, gave her some relief. On October 19 she went to sleep at night as usual, but was wakened about 1 a.m. by an agonising pain in the left side at the waist, which went across to the right side, and spread downwards all over the front of the abdomen. When seen at 9 a.m. she was lying on her back with knees drawn up, with a grey pinched face and an anxious expression, and complained of severe pain in the abdomen. Pulse, 110, small and tense; temperature, 99·6°. The abdominal walls were intensely hard and rigid all over, but especially in the upper part, yet there was less acute tenderness than might have been expected. Disappearance of liver dulness was not looked for. Operation was performed under chloroform at 11 a.m. the same day. A curved incision was made, with its extremities in the middle line, about 5½ in. apart, extending from a little below the xiphoid cartilage to a little below the umbilicus, with the convexity to the right, reaching at its centre to about 2½ in. from the middle line. The skin and subcutaneous tissues were thrown back, and the rest of the abdominal wall was divided in the middle line. As soon as the peritoneum was incised gas began to escape and yellow fluid to ooze out. The perforation was found to be a small circular opening, about ⅛ in. in diameter, on the anterior wall of the stomach. It must have been near the middle of the anterior surface, but the parts were not sufficiently exposed to allow this to be made out with precision. Though the coats around were indurated, there was no difficulty in doubling the peritoneal covering together. Fine silk was used; two stitches were passed through the perforation to prevent further leakage, and six Lembert sutures fixed the surrounding peritoneum. The stomach, being quite flaccid, was not washed out. The abdomen was irrigated with a hot carbolic solution, about 1 to 120. The after progress of the patient was most satisfactory. She bore rectal feeding well, and had no nourishment by the mouth for more than a fortnight. When the wound was dressed for the first time, on October 29, it was found healed throughout by first intention, and all the stitches were removed.

77.—NOTES ON FOUR CASES OF PYLOROPLASTY.

By Rutherford Morison,
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[The following is taken from Mr. Morison's paper:]

The operation known by the name of pyloroplasty, suggested and adopted almost simultaneously by two operators—Heineke

and Mickulicz—and said to be now given up by both of them, has, I believe, a permanent place in surgery. The notes of my first case were published in *The Lancet*, where full details of the case and of the operation I performed were given. A short summary of the conditions present in these cases, after consideration of each and all of them, may be of further use as directing attention to an ailment more common than is usually recognised, and one which only surgery can satisfactorily deal with.

With regard to diagnosis, in all there was a history of dyspepsia of many years' duration and recent rapid loss of weight. There was vomiting, preceded by pain, and a swelling appeared in the epigastric region. A larger quantity of material was vomited than was taken into the stomach, and the vomited matter was offensive or sarcinous in character. The pain and the swelling in the epigastrium were both relieved when the stomach was emptied by vomiting. There was evidence of a much dilated stomach on palpation, percussion, and auscultation. Occasionally the stomach could be seen to form a rounded swelling with peristaltic movements in it, and could be felt to harden at the same time. In two of the cases (1 and 4) a distinct hard nodule could be felt in the pylorus. In the other two (2 and 3) an indefinite but distinct sense of resistance in the neighbourhood of the pylorus was perceptible.

The diagnosis of these cases from cancer involving the pylorus is so difficult that I believe it to be impossible at present. With the pylorus outside the abdomen between my finger and thumb I have been unable to say whether the tumour and the induration present were due to malignant disease or to inflammatory hardening and cicatricial contraction. A long history would, of course, be against malignancy, and this appears to me to be the most important element in the diagnosis. Marked scarring of the stomach wall and adhesions in its neighbourhood would also be in favour of a non-malignant origin. The great majority of cases with the symptoms and signs I have described appear to be due to cicatricial contraction following ulceration in the pyloric end of the stomach. The operation—in some cases easy, but in others, as in Case 3, presenting difficulties of the gravest character—to be performed for their cure is to make a longitudinal incision from the stomach through the pylorus and into the duodenum, to convert the longitudinal incision into a transverse one by traction at the centre of the incision, and to retain it permanently in this position by sutures. The result of the operation is that the old pylorus forms only a small portion of the new outlet which will admit two fingers.

Case 1.—The patient was a woman aged 48 years, sent by Mr. Sheraton, of Sedgefield, and Dr. Drummond. Previously

to operation she weighed 5 st. 1 lb. She could retain no food. The operation was performed on October 16, 1894. At the present date the patient weighs 9 st. 7 lb., and looks and feels in perfect health.

Case 2.—This was a woman aged 37 years, a patient of Dr. Dickie and Dr. Buncle, of Morpeth, and Dr. Drummond. There was a history of prolonged ulceration of the stomach, with obstructed pylorus. The symptoms were aggravated by washing out the stomach. (Here I should like to emphasise a point, for this has been the least successful case of the series. All the successful ones were relieved by washing out, and it seems not unlikely that this sign may mean that active ulceration is still present.) Previously to the operation the patient weighed 8 st. 12 lb. The operation, which was performed on October 17, 1895, was a very difficult one, for the stomach was firmly adherent to the anterior abdominal wall, and the structures in the neighbourhood of the pylorus were matted together. The patient left for home on November 2. For the first month after the operation there was not much improvement. In the next fortnight she gained 16 lb. in weight and all the old symptoms disappeared. She continued well till the middle of January, 1896; she was then ill for twelve days. On May 8, last Dr. Buncle writes:—"She recently has been ill again; vomited, evidently blood somewhat altered; had circumscribed pain and considerable tenderness over the region of pylorus, and is living on peptonised milk." These symptoms, of course, point to a return of the stomach ulceration and may not interfere with the ultimate success of the operation.

Case 3.—This patient was a man aged 31 years, sent by Mr. Sutherland, of Rainton, and Dr. Drummond. Previously to operation he weighed 7 st. 6 lb. 5 oz. He was very feeble and anæmic, although naturally a big, strong man. The operation, which was performed on January 3, 1896, was very difficult, for the colon, pylorus, duodenum, stomach, and omentum were matted in one firm, hard mass. The colon was opened by mistake, for all anatomical landmarks were obliterated. Mr. Sutherland tells me that he met the patient in the street two months after the operation and did not know him, so great was the improvement in his condition. He has gained three stones in weight and his health is restored.

Case 4.—This was a patient of Mr. Martin, of Darlington, a woman aged 59 years. Previously to operation she weighed 5 st. 7 lb. 4 oz. The operation took place on April 12, 1895. On May 6 she weighed 5 st. 5 lb. 7 oz., and on June 9 6 st. 3 lb. She is now able to eat all kinds of food.

The relation of my cases sustains surely the belief I have *expressed* that this operation has come to stay. No cases in

abdominal surgery have given me more satisfaction than these. In each case recovery from the operation has been without incident and the first and third cases have been veritable resurrections.—*The Lancet, October* 24, 1896.

78.—NOTES OF THREE CASES OF ACUTE INTUSSUSCEPTION IN WHICH ABDOMINAL SECTION WAS PERFORMED, WITH RECOVERY.

By J. Crawford Renton, M.D., Assistant to the Professor of Clinical Surgery in the University of Glasgow; &c.

Case 1.—A. B., aged ten months, was seen by Dr. Suttie, and found to be suffering from symptoms of acute intussusception. After succeeding in partially reducing it, Dr. Suttie found a swelling in the right iliac region, which he could not influence by ordinary methods. He asked me to see the child along with him, and I had no hesitation in recommending the abdomen to be opened. This I did, and found the intussusception at the ileo-cæcal valve. Without much difficulty the bowel was withdrawn, and the abdominal opening, which was two inches in length, was stitched up. The child made a perfectly good recovery, and there has been no recurrence since.

Case 2.—E. F., aged eleven months, was seen by Dr. Suttie with symptoms of acute intussusception, which had existed for thirty-six hours. Dr. Suttie had given chloroform and tried injections and kneading, Hutchinson's position, with shaking and inflation. As these gave no relief he asked me to see the child with him. On examination I could feel a distinct lump at the splenic flexure of the colon, and it was quite evident that the sooner the abdomen was opened the better. This I accordingly did, assisted by Dr. Adamson, and without difficulty we reduced the intussusception. The child recovered, and has had no further trouble.

Case 3.—M. W., aged three months, was sent to the Western Infirmary by Dr. Paterson, of Berkeley Terrace, with symptoms of intussusception which had existed for twenty-four hours. In the absence of Professor Buchanan I saw the child. On examination under chloroform a distinct fulness and some swelling was found along the line of the transverse and

descending colon, and per rectum a well-marked protusion was felt. No influence could be produced on this swelling by manipulation or injection; so, assisted by Dr. Walker, I opened the abdomen, and with some difficulty drew out 1½ feet of intussuscepted bowel, the last piece to come out being the cæcum, with a long appendix. Very few adhesions had formed. The intestines were returned and the abdomen was stitched up. The child's bowels acted in six hours, and recovery was uninterrupted.

Remarks.—These three cases illustrate the great importance of operating whenever other means have been tried without avail. There is nothing to be gained by delay, as almost every case dies if not operated on and relieved with speed. To the medical men, therefore, who in the above cases recognised the condition and recommended operation is due the credit of the good results obtained, for the operation in itself should not destroy life. As regards the operation one word is necessary. I feel more and more in abdominal cases that the more rapidly, compatible with efficiency, the patient can be relieved the better it is, for nothing so pinches our vitality as any obstruction in the abdomen. It is truly a vital region. In opening the abdomen, having first made a small opening into the cavity, the enlarging of it is best done with scissors, as in this way bleeding is prevented and time is saved. Should a clamp be required the one I have had made for me by Mr. Down, of London, is the one I have found to be the quickest in application and most efficient, and I have adopted a double needle in stitching the abdomen, which is somewhat quicker than a single one. Every surgeon has his own particular methods, but I feel that we will all do well to keep before us what Mr. Greig Smith dwelt on in his address at Bristol—the great importance of improving our methods of manipulation and rapidity in operating, and thus we will diminish the length of operations, and by so doing increase the safety of our patients. In cases where the obstruction has existed for several days, and the patient is weak, do not give chloroform. Freeze the skin with chlor-ethyl, and make a small artificial anus; this relieves the patient, and when strength returns the obstruction may be dealt with. In all operations we ought to weigh the strength of the patient against the shock of the operation, and where possible diminish the length of it.

I have brought these cases before this Section (British Medical Association, 1896 meeting) as they are encouraging in the midst of others, where the opening of the abdomen has failed to save the patient, and they impress me with the great importance of the operation being done early.—*British Medical Journal, October* 17, 1896.

79.—A CONTRIBUTION TO THE OPERATIVE TREATMENT OF MALIGNANT DISEASE OF THE RECTUM.

By H. Littlewood, F.R.C.S. Eng.,
Surgeon to the General Infirmary, Leeds.

In Mr. Watson Cheyne's recent lectures on operations for cancer he is not nearly so enthusiastic for the local removal of the disease when situated in the rectum as he is for its removal in other regions. If only colotomy is performed, however comfortable a certain number of patients may be after the operation, it can scarcely be considered satisfactory, for the disease still remains. The increasing diminution of the mortality after proctectomy, and the fact that the form of cancer commonly affecting the rectum is not one of the most malignant forms, makes it all the more important to attempt a complete removal of the disease.

The operation of proctectomy in either the lateral or lithotomy positions, I must confess, has never had any great attractions for me. My real interest was first aroused by Mr. Godlee, who kindly saw the first case I refer to in this paper with Mr. Pogson and myself in October, 1894; he then gave me an account of the position in which he operates in these cases. One operation in the post-mortem room soon convinced me of the great value of his advice. I quote from Mr. Godlee's letter to the *British Medical Journal*, July 8, 1893, describing the position:—"Instead of placing the patient in the lithotomy position I turned him on his face close to the side of the table; the right thigh was extended, but the left hip was flexed, the thigh hanging over the side of the table, and the knee resting on a chair." I have modified this by placing the patient in the position used for dissecting the buttocks, raising the pelvis on a triangular block, and having both knees flexed and resting on a chair.

It appears to me that, by having both hips flexed, the parts become still more accessible, and it is astonishing with what comparative ease the anæsthetic can be administered. After the sacral route advocated by Kraske, the position recommended by Godlee appears to me to be the most important detail contributed to the performance of proctectomy. Some surgeons perform a preliminary colotomy in all cases unless there is considerable obstruction. I think this is unnecessary, and should be the exception. A week's careful emptying of the bowels before the operation by means of purgatives and enemata, a diet that is easily absorbable, and after the operation to prevent the bowels from being opened for ten or fourteen days will obviate

the necessity of this procedure. If the lowest part of the rectum is removed the bowels may be opened as soon as there is a good granulating surface. In none of the eight cases have I performed colotomy. The growth in all cases was a columnar epithelioma. (The details of the cases as well as the illustrations are omitted here.)

It is needless to say that the operation is one of great severity, the time taken in its performance ranging between one and one and three-quarter hours. I venture to think that the foregoing records speak for themselves as to its value, and I believe the following points suggested by them are worthy of consideration: —(1) The preparation of the patient by having the bowels thoroughly cleaned out before the operation, and then keeping them closed for twelve or fourteen days after if the divided ends have been united. (2) A preliminary colotomy should be the exception. (3) The advantages of the prone position enabling one to easily see all the steps of the operation. (4) The skin and muscle flap. (5) The bone flap, which can be sutured after the resection of the gut. It is important, if possible, to gauge how much of the sacrum it may be necessary to saw through. As the spinal dura mater extends to the level of the second sacral vertebra it would not be wise to saw through the bone at a higher level. If it is thought that the disease would not be accessible after dividing the bone at this level, the operation should not be attempted; removal by abdominal section would be the method to adopt. (6) The use of the large bougie or large size Hegar's dilator appears to me to be of great assistance: in the first place, while separating the bowel from its surroundings, and then as a guide on which to divide the gut transversely. A clean, transverse cut, instead of slitting up the bowel in the longitudinal direction, is an obvious advantage, especially if one is intending to suture the divided ends. (7) An attempt should be made to restore the continuity of the bowel, and although in the four cases in which I have endeavoured to do this I have only actually succeeded in Case 6, yet there is very little doubt that the ultimate results of Cases 7 and 8 will be equally satisfactory, and, even if one does not succeed, the patients are no worse off than with a colotomy opening. In Case 5 I could not get Murphy's button to work. In future I should prefer to use one of Mayo Robson's bobbins. (8) When the disease is high up the catheter in the bladder is of very little value; in fact, I only used it in Case 1. (9) One other point in the history of these cases is notable—*i.e.*, five of them suffered within a short time of the operation from some form of mental disturbance, from which they have happily all made a complete recovery. All these patients have had great *mental* anxiety before the operation.

Mr. Erichsen's "Surgery" (1895 edition) the paragraph describing Kraske's operation ends thus: "Complete suture of the upper end to the lower has seldom succeeded." I have not seen many reports of successful cases, but look with every confidence to the future that these numbers will be greatly increased, and that the artificial anus, in whatever position it may be situated—and I think the nearer it is to the original anus the better—will be the exception and not the rule. Early diagnosis will be a general factor in bringing about such a result.—*The Lancet, September* 12, 1896.

80.—EXTERNAL HEMORRHOIDS, WITH SPECIAL REFERENCE TO THEIR TREATMENT.

By Lewis H. Adler, Jr., M.D.,
Professor of Diseases of the Rectum, Philadelphia Polyclinic and Post-Graduate College;
Surgeon to the Charity Hospital and to the Out-patient Department of the Episcopal Hospital,
Philadelphia, Pa.

[The following is taken from Dr. Adler's paper:]

External hemorrhoids are divided into (*a*) the venous, (*b*) the cutaneous, and (*c*) the compound. (*a*) The venous variety occurs in three forms:—(1) As a marked varicose condition of the external hemorrhoidal plexus; (2) as a thrombosis of this plexus; and (3) as a clot of extravasated blood due to a rupture of a varicose vessel. (*b*) The cutaneous pile consists essentially of a hypertrophy of the skin surrounding the anus. It frequently is the result of a venous pile, a fold of skin being left after the clot has been removed, either by absorption or operation. When uninflamed it occasions no great inconvenience, but when aggravated by improper diet, irregular habits, uncleanliness, &c., it invariably causes the patient, as stated by the Messrs. Allingham, an amount of suffering quite disproportionate to the pathological appearance. Dr. Joseph M. Mathews states that in his opinion the cutaneous pile is not an excrescence, as some authorities think, but an enlargement of the superfluous tags of skin sometimes found around the anus. (*c*) The compound external pile, in which the hemorrhoid is largely external but is also partly internal, is so frequently found as to justify its separation into a distinct class.

Treatment.—(The author refers to the treatment of such predisposing causes as chronic constipation, cardiac and pulmonary disease, functional hepatic derangements.) Polypi,

irritable ulcer of the rectum (more commonly called fissure), rectal stricture, phimosis, adherent prepuce, stone in the bladder, enlarged prostate, urethral stricture, malpositions of the uterus, and growths or other diseases of that organ, as well as of its appendages, must receive attention before we can hope to deal satisfactorily with the hemorrhoids.

The local treatment of external hemorrhoids may be divided into the operative and the non-operative. The first is the preferable plan in nearly all instances. The operative plan, by which method only may we expect a radical cure, may be accomplished by (*a*) simple incision, by (*b*) excision, or by (*c*) excision and primary suture of the cutaneous edges of the resulting wound.

(*a*) Simple incision is applicable only to the venous form, excluding the simple varicose variety, which latter, unless inflamed, hardly ever requires operative interference. The operation of incision consists in shaving the hair; cleansing the parts thoroughly and rendering them as aseptic as possible; then anesthetising the tumour, by means of a hypodermic injection of a four-per-cent. solution of the hydrochlorate of cocaine, or by a spray of ethyl chloride, or by freezing the pile with salt and ice; and then catching the tumour firmly between the thumb and finger of the left hand, and transfixing its base in the direction of the radiating folds of the anus with a curved bistoury, and cutting out; at the same time, by gentle pressure the clot or clots may be extruded. The subsequent treatment consists in dusting iodoform, or aristol and boric acid equal parts, or iodol, freely over the raw surface, being careful to see that the same is finely powdered and not lumpy; then apply a piece of lint, soaked in a five-per-cent. carbolised oil, to the bottom of the wound, to prevent the sac refilling with blood and to enable healing to occur from below instead of running the risk of a superficial fistula forming by the edges of the wound only uniting. The patient should be advised to keep quiet for a few days, or at least not to take any active exercise. It takes about ten days for the healing process to be completed, and usually the relief from pain is immediate and complete.

(*b*) Excision is the form of treatment most generally employed for the cure of all the various forms of external hemorrhoids. The technique is similar to that described for incision, with the exception that the pile is grasped by some suitable instrument, such as a hemostat, and the tumour is removed in its entirety by means of a pair of scissors, curved on the flat. In some instances a small artery may require a ligature. If the operation be properly performed, there will be none of the dangers (so frequently mentioned in text-books) of the formation of a stricture. Iodoform or some one of the combinations of

stearate of zinc is freely dusted over the raw surface, and a firm pad of gauze and cotton and a T-bandage complete the dressing.

(*c*) Excision combined with primary suture of the resulting wound. The essential difference between this method and the one just described consists in the close apposition of the wound by carefully buried silkworm-gut sutures. The following points might, however, bear emphasis:—The tumour is anesthetised, and then grasped on either side of its long axis by the hemostat; the necessary number of sutures are now inserted, care being taken to place them beneath the base of the pile, so that when the latter is excised the stitches will not show in the wound, but be buried. This plan of dealing with external hemorrhoids has proven most satisfactory, not alone to me but likewise to the patient. They get well much quicker and suffer less annoyance than when the parts are left to granulate. The sutures are removed on the third or fourth day. In any stout person I am in the habit of taking out the sutures within forty-eight hours, for fear of the tension producing a fistulous track. I have operated on 22 persons by this procedure, and have had primary union in all but two instances. Operating in this manner also prevents hemorrhage.

Non-operative or palliative treatment consists primarily in keeping the parts thoroughly cleansed by bathing with warm water and Castile soap.

A most valuable and soothing lotion for use during the acute inflammatory stage is one advised by the Messrs. Allingham :— ℞ Strong subacetate of lead solution, 1 fluid ounce; tincture of opium, ½ fluid ounce. Mix. One teaspoonful of the lotion to be mixed with one wineglassful of milk, and to be applied frequently to the anus.

A formula which I have found very useful is as follows:— ℞ Fluid extract hamamelis, 1 fluid ounce; fluid extract hydrastis, compound tincture benzoin, of each 4 drachms; tincture belladonna, 1 drachm; carbolised olive oil (5 per cent.), sufficient to make 3 fluid ounces. Mix. S.: apply often to the parts. Heat or cold applications are often of service.

Dr. Ball considers the local application of a mixture of extract of belladonna and glycerine smeared over the anus, and followed by a warm stupe, the best palliative treatment for external hemorrhoids. In addition the bowels should be freely moved, and a light, easily digested diet, with rest in bed, prescribed. Any of these remedies will, as a rule, cause the inflammation to subside within a few days; but usually a thickened tag of skin is left which is liable at any time, on the slightest provocation, to become inflamed.—From Abstract in *The Therapeutic Gazette, August*, 1896, *p.* 509.

81.—RECURRENT APPENDICITIS.

By F. A. Southam, M.A., M.B.Oxon., F.R.C.S., Surgeon to the Manchester Infirmary.

[In the discussion on the surgical treatment of appendicitis, at the British Medical Association meeting, 1896, Mr. Southam made the following remarks:]

Mr. Southam said he would confine his remarks to the treatment of the recurrent form of appendicitis, which came under the notice of the surgeon quite as frequently as the more acute form of the disease, now that its pathology was clearly understood, and it had become a recognised fact that in many cases relief could only be afforded by means of operation. During the past eighteen months he had operated upon ten cases of this nature, removing the appendix in eight of these, and the state of the appendix, as found at the time of the operation, illustrated the pathological conditions which were usually present, and also showed well the necessity for surgical interference. In two the appendix was twisted on itself, and bound down by old adhesions; in two it was distended with fluid, in one instance clear, in the other muco-purulent; in two it contained a hard, fæcal concretion. In four cases suppuration had taken place; in three of these the pus was localised, an encysted abscess having formed in the neighbourhood of the appendix; in the remaining case the suppuration was general, there being well-marked evidences of diffuse purulent peritonitis. Until quite recently cases of recurrent appendicitis were treated by simple medicinal measures, which, though successful in relieving the symptoms during an attack, were quite powerless to prevent a recurrence of the attacks when due to conditions such as those just described. Under these circumstances the only treatment likely to produce what might be termed a "radical cure" was removal of the appendix, which should be formed in the quiescent period following an attack, when the more acute symptoms had all subsided. An important question to consider was the stage in the course of the disease when the operation should be performed. He did not think that the appendix should be removed after a first attack, for many persons suffered from a single attack of appendicitis, recovered from it, and experienced no further trouble. After two well-marked attacks, however, he was of opinion that the operation was indicated, especially if in the quiescent period any physical signs persisted, the most important of which were a local swelling in the situation of the appendix, with tenderness or increased resistance above Poupart's ligament. On three patients he had operated after a second attack; in two of these small

collections of pus were found deep down in the neighbourhood of the appendix, of which previously there had been no suspicion, the operation in each instance being performed in the quiescent period, when all acute symptoms had subsided, there being merely an obscure fulness, slightly tender on pressure above Poupart's ligament. In another case, also operated upon after a second attack, the appendix was so tensely distended with fluid that it was on the point of rupture, the symptoms being identical with those just mentioned, where pus was present. In a case operated upon after a third attack a hard fæcal concretion was found in the appendix; in this instance all tenderness and local swelling had quite disappeared. When the appendix is constricted or occluded from being bent on itself and bound down by adhesions, or from thickening of its walls, the result of previous attacks of inflammation, especially if it is distended with fluid or contains a fæcal concretion, there is always a risk of ulceration and perforation taking place, followed by escape of its contents and suppuration around it. This complication—the formation of pus—had occurred in four of the ten cases; in two of these the abscess was opened and drained, the appendix not being recognised; in the other two a perforation was found in the appendix, which was removed. In three of the four cases, where suppuration had eventually taken place, the patients had suffered from frequent attacks of appendicitis, recurring at irregular intervals for more than a year. These cases illustrate the advisability of surgical interference in recurring appendicitis, for there is always the risk of ulceration and perforation sooner or later taking place. By removal of the appendix at an early stage in its course, these serious complications may always be avoided.—*British Medical Journal, October* 20, 1896.

ORGANS OF URINE AND GENERATION.

82.—THE TREATMENT OF GUNSHOT WOUNDS OF THE KIDNEY.

[The following is an editorial from the *Boston Medical and Surgical Journal, August* 13, 1896:]

Keen publishes an exhaustive statistical study of the treatment of traumatic lesions of the kidney based upon a complete collection of the 155 cases of traumatisms of the kidney which have been published since 1878. This time is taken as marking fairly well the period at which modern

antiseptic surgery was generally practised. His cases are grouped in five classes:—(1) Gunshot wounds of the kidney; (2) wounds of the kidney other than gunshot; (3) subcutaneous rupture of the kidney; (4) Rupture of the ureter; (5) traumatic hydronephrosis.

In the first class, gunshot wounds of the kidney, which alone we purpose to consider, there are nineteen cases, of which ten recovered and nine died. In five of the nineteen cases nephrectomy was done, and four of the five died. This high mortality is, however, as our author points out, deceptive, as is shown by detailed examination. In one the fatal result was independent of the nephrectomy; in another hemorrhage had already doomed the man; another died from suppuration in the other kidney; and the fourth died from nephritis in the other kidney. In the five dying without nephrectomy, three died of peritonitis and two of hemorrhage. Of the ten which recovered four are important as being complicated with other injuries, such as perforation of the intestine, injury of the spleen and liver, and intra-abdominal hemorrhage.

The treatment naturally will vary with the extent of the lesion. For wounds involving merely the renal tissue, simple disinfection and drainage will suffice. Wounds involving the pelvis or any of the calyces will naturally be complicated by the escape of the urine into the tissues. If it be normal and bland, however, this is not a serious complication, as it is very possible for the wound to escape infection unless other sources exist. Wounds of the renal vessels will result in hemorrhage, which may, if retro-peritoneal, form a localised perinephritic hematoma, or push its way between the layers of the meso-rectum, or if intra-peritoneal may flood the abdominal cavity. The blood may also pass by the ureter into the bladder. The ureter alone may be divided by the ball. This condition is, however, so rare, that only one certain case is found on record, that of the Archbishop of Paris, who was wounded in the Revolution of 1848. No wound of the ureter alone was recorded in our Civil War.

Cases in which the surgeon has reasonable evidence that the kidney has been wounded, especially if the grave symptoms of a large lumbar hæmatoma or if intra-peritoneal bleeding are present, require, of course, immediate operative treatment. In cases where the ball enters by the loin, or from in front, and emerges so near that there is reasonable certainty of the kidney alone being injured, the lumbar incision may be chosen. In most cases, however, the probability that other abdominal viscera have been injured is so great, that an abdominal incision should be selected. The first and most important step *is, of* course, to find out if hemorrhage is going on, and to find

and tie the bleeding vessels. If the vessels have been so badly torn that there is danger to the vitality, and later to the secreting power of the kidney, nephrectomy must, of course, be performed. The mortality in these severe cases will be high, not so much on account of the nephrectomy, as of the severe hemorrhage which must have taken place before it is undertaken. Between these severe cases, and the simple injuries which require merely disinfection and drainage, there will naturally be a debatable class, in which reasonable doubt may exist. In these cases experience must decide what is best to be done.

83.—THE IMPORTANCE OF BIMANUAL EXAMINATION OF THE URINARY BLADDER IN DIAGNOSING HÆMATURIA OF VESICAL FROM THAT OF RENAL ORIGIN.

By Henry Morris, M.A., M.B.Lond., F.R.C.S.Eng.,
Surgeon to the Middlesex Hospital.

My object in putting together these notes is to point out the assistance to be derived in some cases by the bimanual examination of the urinary bladder under anæsthesia. By bimanual examination I mean the examination with the index finger of one hand in the rectum or the vagina whilst the other hand forces the empty bladder into the pelvis by firm pressure upon the abdominal walls immediately above the pubes. It is in the male especially that I have realised the value of this method of examination. In the female it is equally, or even more, effective, because owing to the absence of a prostate gland, and the facility with which the vaginal canal allows of the back of the bladder being manipulated, the examination is made under better conditions than in the male; but at the same time this method of examination is of less importance in the female than in the male, because it is so easy and so safe to make a direct digital examination of the female bladder after rapidly dilating the urethra under an anæsthetic. Still even in the female in an emergency, or when for any reason the direct examination of the interior of the bladder with the finger is inconvenient or undesirable, the bimanual examination will prove serviceable. In male patients, in whom it is a serious matter (because of its involving a cutting operation) to examine digitally the cavity of the bladder, the bimanual examination will often enable the surgeon to arrive at a positive diagnosis, and will at once guide

him as to the procedure he ought to adopt for the patient's relief or cure. It is particularly worthy of trial in cases where there is troublesome hæmaturia—troublesome, that is, from the difficulty or impossibility which exists in keeping the bladder free, even for a brief period, of bloodstained urine, and therefore of maintaining a clear, watery medium wherein to employ the cystoscope. It not unfrequently happens that hæmaturia is attributed to renal calculus when, in fact, the seat of the hemorrhage is the bladder. If, as is sometimes the case, the cause of the hemorrhage is a vesical stone, the diagnosis can, of course, in most instances be cleared up by properly sounding the bladder; but should the stone be fixed behind the prostate or be encysted, it can easily escape detection by the sound, and yet its presence can be ascertained by bimanual examination. In cases of vesical papillomata the sound affords us absolutely no aid, and it is in these cases especially that I have found the bimanual method of such extreme value. Its systematic employment will, I am convinced, often be the means of preventing unnecessary exploration of the kidney. The following cases will serve to illustrate the usefulness of the method.

[The author then records two illustrative cases—one of malignant disease and the other of papilloma of the bladder, and makes the following remarks on them:]

In neither of these cases could anything abnormal be felt by a simple digital examination per rectum, and it was only by the simultaneous depression of the bladder by pressure on the hypogastrium and the digital exploration per rectum that these tumours could be ascertained to exist. Anæsthesia was necessary to obtain sufficient relaxation of the abdominal walls, and the bladder was thoroughly emptied of urine by the catheter. A simple rectal examination will sometimes reveal a malignant growth which is infiltrating the prostate or the tissue between the base of the bladder and the rectum. Very rarely a malignant growth affects the front of the fundus and can be felt through the abdominal wall when the bladder is partially distended. Occasionally a large solid tumour of the back of the bladder is readily detected through the parietes; but a villous papilloma has always and rightly been described as incapable of being felt per rectum. The bimanual plan, however, can be recommended as one means of diagnosing vesical from renal hæmaturia, and may be confidently employed in the diagnosis of fair-sized villous tumours of the bladder and of small malignant growths situated higher than the neck and base of the viscus. It is noteworthy that in both the cases above referred to the vesical growth was situated about the vesical area of the left ureter, and in both cases the left kidney region was the seat of pain, and the left kidney was suspected to be the seat of calculus.

In conclusion, I will briefly refer to a case in which bimanual examination revealed the presence of a very large villous papilloma nearly filling the cavity of the bladder.

Case 3.—A man aged 31 years was admitted into the Middlesex Hospital under my care in November, 1895. His first symptom was hæmaturia in the latter part of 1893. In February, 1895, he passed a large quantity of dark clots attended with much pain, and at the end of the same month several small calculi the size of a pin's head were voided with the urine. His attention was specially drawn to them because he heard them projected against the chamber when he was micturating. Between February and November, 1895, he passed similar stones on eight or nine occasions, and blood with his urine at intervals of a fortnight or even ofteuer. On applying to the out-patient department he was sounded by Mr. Hudson, but no stone or growth was detected in the bladder. On admission his urine was found to be acid, of specific gravity 1020, and to contain blood. There was no tenderness or fulness in either loin. Nothing abnormal could be felt per rectum. The patient referred to the hypogastrium as the seat of some pain. There was increased frequency of micturition, and he described the hæmaturia as being aggravated by exercise. On November 23 he was put under anæsthesia, and his bladder was emptied by the catheter. He was then examined by the bimanual method, with the result that much the same sensation was experienced as if the index finger within the rectum had pressed against a sponge fairly saturated with blood. The bladder was then irrigated with weak carbolised water, supra-pubic cystotomy was performed, and a villous papilloma weighing over four and a half ounces was removed. As the whole of it could not be satisfactorily extirpated through the suprapubic wound, a perineal incision was also made. The patient recovered well and remains well to this date.—*The Lancet, October* 31, 1896.

84.—RECENT ADVANCE IN THE KNOWLEDGE OF CYSTITIS.

[The following is from an editorial by Dr. Robert W. Taylor in the *Medical News*, June 6, 1896:]

Upon no branch of medical knowledge has bacteriology thrown more light than upon the various inflammations of the bladder and of the genito-urinary tract. Until ten years ago our ideas as to the etiology and pathology of cystitis were, judged by the standard of to-day, crude and inaccurate. But since that date an era of light has set in. In the early days of the bacterio-pathologic research into the phlegmasiæ of the urinary tract,

between thirty and forty varieties of microbes were found, and were regarded as more or less potent etiologic agents. As time went on, however, many supposedly harmful microbes were found to have little or no pathologic influence, others were proved to be harmless saprophytes, still others of accidental occurrence; while many were found to be simply different varieties of a parent stock. The most complete portrayal of cystitis has been made by Melchior, a Dane, and the value and importance of his work in the French translation has been much enhanced by notes and comments by Guyon and Hallé, who are in accord with him on all the main issues. Melchior's essay is based on 35 cases of chronic cystitis carefully studied by him clinically, microscopically, and bacteriologically, and it has the further advantage that the essential points of about 200 cases observed by many writers and experimenters are given in a critical analysis. From these storehouses of knowledge, therefore, much can be gained, and various forms of cystitis may be traced on broad lines.

To approach the study of cystitis intelligently, two considerations relating to old ideas present themselves. In the first place it must be remembered that advanced thinkers and experimenters utterly repudiate the existence of the so-called catarrh of the bladder. Such a condition is a myth, bladder inflammation being really a suppurative process of varying degrees of severity, and in its mild form (which is generally called catarrh of the bladder) the tissue-exudate is pus and not mucus. In the second place, the old idea that ammoniuria, or cystitis with ammoniacal urine, presents the type-form of bladder inflammation is almost wholly incorrect, since ammoniacal decomposition of the urine is, in the vast majority of cases, secondary to other pathological conditions. As a corollary of the last postulate, it may be stated that in the majority of cases of cystitis the urine is acid, and ammonia is not present in it. Fetid urine is not necessarily alkaline nor ammoniacal.

In the development of cystitis certain underlying conditions of mucous membrane must exist in order that a condition of receptivity or susceptibility to microbic invasion may be present. In retention of urine, particularly when of long standing and severe from any cause, the bladder-tissues become much distended and may be more or less injured, and in this altered condition of their nutrition they cannot, as they may when normal, resist invasions by micro-organisms. Then again, in chronic gonorrhœa the urethro-cystitis which is not infrequently present, becomes a focus from which the whole cavity may be infected. Clinical observation has shown that *this* susceptible condition or tendency to bladder-inflammation

varies in different persons; some patients seem exceedingly susceptible, others less so, while still others are almost immune.

By a remarkable concensus of statement it seems that the most frequent pathologic agent in cystitis is the bacterium coli commune, which, in 35 cases examined by Melchior, was found in 66⅔ per cent. Next in order is the streptococcus pyogenes, which Melchior found in 4 cases. Cystitis depending upon these microbes which usually are found singly in a case, and exceptionally in combination, may present varying clinical phases, but the urine is usually fœtid in odour and acid in reaction. Upon long standing outside the body or in cases of retention with overflow and long-standing residual urine, Hallé and Guyon think that the bacterium coli commune may exert a mild action in decomposing urea and in developing ammoniuria. Melchior, however, is not of this belief.

It seems that the most energetic and dangerous microbe found alone, or in combination with one or both of these forementioned micro-organisms, is the proteus of Hauser. This bacterium exerts an energetic action in the decomposition of the urea, and by means of the ammonia, which it produces without any adjuvant influence, may cause inflammation in a perfectly healthy bladder. In other words, without any tissue predisposition, this microbe may cause cystitis by reason of the chemical irritant which it can produce in urine. Cases of cystitis due to the proteus of Hauser alone, or in combination with the bacterium coli commune, or the streptococcus pyogenes, are always those of exceptional gravity, and in these urinary infection is frequent and often deadly, and ascending invasion of the ureters and kidneys is quite a common complication.

On the question of gonorrhœal cystitis, Melchior's observations are very interesting, since they enable him to definitely state that he has in such cases found the pathologic agent to be the gonococcus. This experience is, in my judgment, exceptional, and Hallé, in a footnote, undoubtedly states the correct facts when he says that in general gonorrhœal cystitis is due to secondary infection, but that in a minority of cases the gonococcus is the cause of the inflammation.

No doubt can now be entertained of the fact that the bacillus of tuberculosis may be the active cause of a severe form of cystitis in which the urine is purulent, acid, and sometimes bloody. Both Melchior and Hallé rightly insist that great care and technical skill are demanded in the examination of the urine for the discovery of Koch's bacillus, which was found seventy times in two hundred examinations by Hallé.

Though we know that the genitals of males and females, even those of strictly cleanly habits, swarm with microbes, innocent and pathogenic, it is interesting to learn that by careful

gathering and culture Melchior found the bacterium coli commune and the staphylococcus pyogenes aureus upon the prepuce, in the vulva and vagina, and upon the lips of the meatus, both male and female. When to this knowledge is added the well-demonstrated fact that in the normal, and particularly in the diseased urethra, several forms of pathologic microbes are constantly present, it can readily be seen how easy it is to set up an inflammation by the conveyance of these micro-organisms by means of instruments into a susceptible bladder. The necessity for great care and antisepsis in operations, both minor and major, upon the male and female bladder is hereby forcibly brought out, and well may Melchior emphasise the warning to never provoke a cystitis.

85.—CASTRATION FOR ENLARGED PROSTATE.

[The following is taken from an editorial article by Dr. J. William White, on Dr. Cabot's paper in the *Annals of Surgery*, September, 1896, p. 265:]

In an interesting and thoughtful paper Dr. Cabot has reviewed the question of castration for enlarged prostate, and has endeavoured to reach some definite conclusions as to various important issues involved in the selection of cases and the choice of operation. It is to just such studies of the evidence that we must look for further advance along this line, and although there seems ground for criticism of some of his arguments, and for dissent from several of his conclusions, the profession is certainly indebted to any one who insists upon thorough discussion of a subject of so much practical importance.

Cabot says that he is "inclined with some diffidence to advance the belief that the correct death-rate is certainly under 20 per cent." This conclusion seems scarcely warranted even by the published facts, and is directly contradicted by the well-known unpublished experience of many operators throughout the world. In White's paper of 1895 it was not thought desirable to appear to base an argument for castration too largely on the failure of prostatectomy, and an effort to preserve a strictly judicial attitude was made; but it would probably not be difficult by earnest solicitation to collect many more fatal cases of prostatectomy than have yet appeared in print.

The writer has seen a few cases in which the relief experienced by the patients was trifling, and the annoyance caused by persistent suprapubic fistulæ was great, and yet they had been published as successful. Relapses have been reported, and in some instances the operation was a total failure, rather aggravating than ameliorating the vesical pain and tenesmus.

It cannot be accepted as true either that the removal of a stone "adds considerably to the dangers" of castration, or that "it is a common experience to see symptoms, apparently due to the prostate, disappear after the removal of a stone." Such statements cannot be suffered to pass unchallenged. Litholapaxy after castration becomes in many cases of hypertrophied prostate an operation infinitely easier and far safer than the same operation in such cases without preliminary castration. This has been demonstrated. There seems no good reason in the great majority of cases for doing the two operations at the same time. The characteristic symptoms of enlarged prostate do not disappear after removal of a co-existent vesical calculus. On the contrary, as a rule, their persistence will be a source of disappointment to both patient and operator.

A table of 92 cases of castration for enlarged prostate, just collected for the writer by Dr. Alfred Wood, of Philadelphia, shows 9 deaths, a mortality of 9·78 per cent. This reduction is probably due to a better selection of cases, and seems likely to continue. It confirms the belief originally expressed that the operation *per se* ought not to have a mortality of more than about 7 per cent., and justifies the statistical rejection of many of the cases which have been subjected to castration when obviously beyond all possibility of help. It may be added that in this table all fatal cases have been included, among them two in which the operators expressly assert that they had strongly advised against castration, and one in which death occurred five months after operation ; in the latter case litholapaxy was done at the same time as the castration. If these are omitted, as they should be, the deaths number only six, a percentage of 6·5, figures which certainly correspond far more closely to the *a priori* views which experienced surgeons everywhere entertained as to the direct result of this operation.

In endeavouring to arrive at the legitimate mortality of castration in properly selected cases, in contradistinction to that of the operation in cases that are too far advanced to admit of any other form of treatment, or who are *in extremis*, most or all of the cases mentioned may be legitimately deducted from those who died as a result of the operation. Deducting those cited, the mortality in Dr. Cabot's table would be 10 per cent. instead of 20 per cent.

The improvement in both operations is to be looked for largely in the better selection of cases. Improved methods have undoubtedly lessened, and may continue to lessen, the death-rate, after suprapubic prostatectomy, but no "technique" can remove the essential dangers of that procedure, as anyone who has employed it a number of times and with varying methods must admit. On the other hand, there are no such

dangers inherently associated with castration. A comparison in imagination of the probable mortality of the two operations if performed on two series of healthy individuals may be of aid in determining how much greater improvement will come with "added experience." Of course, better selection will also be a factor in reducing the mortality of prostatectomy, but the grave character of that operation and the need of special skill and experience kept it largely in the hands of trained surgeons, and thus favoured from the outset a better choice of patients than was likely to be made in the case of castration—an operation that every general practitioner feels competent to perform.

It seems worth while to argue thus at length in regard to this matter, because Dr. Cabot's conclusion that prostatectomy "stands upon about the same footing as castration in its fatality when applied to all cases of advanced prostatic hypertrophy" does not seem justified by the facts before the profession.

As to the results obtained, the assertion that there is close parallelism is based on an analysis of only 36 prostatectomies. A careful review of Moullin's table from which these are taken shows that there is not sufficient basis for the statement that there is any true correspondence in results except as to percentages, and these would change with the point of view of the calculator as to what constituted a "corresponding improvement in condition." The figures at any rate are somewhat small to base such positive statements upon. The elision of one case makes a difference of 3 per cent. in the results. Dr. Cabot considers 22 cases of ligation and division of the vas as "too small a number to enable us to draw any conclusion either as to the mortality or the degree of improvement which can be expected." If this is true, 36 cases hardly afford ground for the statement that prostatectomy and castration are "astonishingly parallel" in any respect.

Dr. Cabot's views as to other mooted points are likewise based on observations altogether too scanty to be conclusive. He rejects the suggestion that the extraordinary rapidity with which obstruction sometimes disappears may be due to shrinkage of the third lobe (especially rich in glandular tissue), which seems to be the first to atrophy and disappear, partly because he has seen two specimens in which after castration the third lobe existed as a large and obstructing body. The writer has seen several, but not from cases in which the above-mentioned rapid subsidence of symptoms had taken place. Such observations reported without reference to the clinical history should not be introduced as arguments against the theory in question, as no assertion has been made by anyone that in every case the third lobe or any other portion of the prostate atrophied and dwindled. The cause of the rapidity with which improvement

takes place in some cases is probably composite, and it is not impossible that changes in vascularity, muscular contraction, and atrophy of the third lobe are coincident factors, but the possibility of the latter being an important one, while not proved, is certainly not disproved by such observations as the above.

The argument based on microscopical evidence of changes in the prostates of non-castrated persons similar to those observed in prostates after castration, and on one case in which gland tissue had disappeared after the operation, but muscular and fibrous tissue had not, and the size of the gland was undiminished leads up first to the statement that "this observation would seem to show that the myomatous tissue of the prostate is not essentially affected by castration" and later—no further evidence being adduced—to the "conclusion" that "castration is of but little use in myomatous and fibrous prostates." The conclusion may be correct; it would perhaps be a good guess if made on general principles; but it does not follow from the premises contained in Dr. Cabot's paper.

The experimental evidence advanced by Griffiths, White, and Kirby seems absolutely conclusive as to the occurrence in dogs of the histological changes which are said to be possibly due in man to "degenerative changes already occurring in a pathological organ before the castration was done." It may not be fair in this instance to argue from the dog to man, but it is almost invariably justifiable to do so, and it would, therefore, seem improper to ignore the results thus obtained and also the evidence as to the condition of the prostate in eunuchs, in whom it is said to become a mere ridge at the base of the bladder. If castration in them can cause disappearance not only of glandular, but also of muscular and even finally of much of the fibrous tissue, there can be no *a priori* grounds for asserting that myomatous and fibrous prostates will refuse to yield to castration, and although it may be true, and probably is, that they will not respond as quickly or as certainly to the operation as the "succulent" and glandular prostates, it is going far beyond the evidence at present available, to assert that it is "of but little use" in such cases.

As to the question of relapse the same tendency to generalise from insufficient data is to be noted. Dr. Cabot says, "A few cases have occurred in which there has been a distinct return of irritability and obstruction." As to his specific inquiry, he says he received answers from 27 persons addressed and "most of the reports were favourable." Of his 61 cases in which the accounts were explicit enough to justify an opinion as to the functional result he mentions but one case of relapse. He gives no figures as to relapses after prostatectomy; and yet in his

"conclusion" he says, the tendency to relapse shows itself in about the same proportion of cases after either operation!" This, again, may be true, but the writer does not believe that it is, basing his opinion on a broad survey of all recorded and a number of unrecorded cases. Whether it is true or not, nothing in Dr. Cabot's paper demonstrates.

The writer would be quite content, so far as he has a personal interest in the establishment of the operation, if nothing better could ever be said of it than Dr. Cabot says would be justified by the present statistics if further experience confirms them :— "We shall be able to express the facts thus to our inquiring patients. You have eight chances in ten of getting through the operation all right, and if you are successful in this, you have again eight chances in ten, or a little better, of getting very substantial relief from your urinary difficulties."

The writer also believes, however, that this much cannot truthfully be said of prostatectomy, and that it will be possible in the future, with entire accuracy, to make a still more favourable presentation of the facts as to castration.—*Annals of Surgery, September*, 1896, *p.* 388.

86.—INTERESTING CASES OF PERINEAL SECTION, WITH REMARKS.

The above is the title of an interesting and instructive paper by G. Frank Lydston, in the *Journal of the American Medical Association* of March 14 and 21, 1896. Lydston, after detailing 53 of his cases, calls attention to the value of the preparation of the patient for operation. In his own practice the main features of the preparatory treatment consist in the administration of eucalyptus and careful regulation of the diet, with rest in bed, where these measures are practicable.

The writer does not believe that perineal section should be performed in every case of deep stricture. In many cases of apparently intractable deep stricture operation may be avoided, and the subsequent treatment carried out successfully by gradual dilatation, provided sufficient patience be exhibited in instrumentation. In some cases the preparatory treatment of regulated diet, eucalyptus, saline diuretics, hot sitz-baths, and leeches to the perineum and anus, may remove those conditions which, superadded to the actual organic contraction, offer insuperable obstacles to dilatation as long as they exist. There are certain cases, however, which experience has proven absolutely demand operation. These cases may be classified *in* general terms as:—(1) Cases in which the patient comes from

a distance, and is unable to receive proper treatment by dilatation at the hands of the local physician or surgeon; (2) cases in which the patient can only have dilatation practised at irregular intervals on account of some peculiarity of his occupation; (3) severe or moderately severe traumatic strictures; (4) cases complicated by serious prostatic or bladder disease; (5) cases in which obstinately recurring chill and fever are observed with or without (especially with) interference with the deep urethra by dilatation; (6) cases complicated by renal disease; (7) cases in which severe hemorrhage follows operative interference with the anterior urethra; (8) cases of irritable and resilient stricture of large calibre at or about the bulbo-membranous junction, accompanied with symptoms of severe vesical irritation; (9) cases of severe anterior stricture in which instruments can be introduced only with great difficulty, if at all. Safety, convenience, thoroughness, and greater immunity from recurrence are best obtained by the radical operation in such cases.

With regard to the danger of sepsis, it is now admitted by every practical surgeon of experience in genito-urinary surgery that the key-note of safety is a perineo-vesical tube. A boutonnière is advisable where bladder or prostatic complications worthy of attention exist, as we thereby not only render the anterior urethral operation much safer, but also in many cases bring about a cure of the deeper-seated disease.

That perineal section is safer than repeated operations by sounding in many cases of deep urethral stricture is so well understood by practical genito-urinary surgeons that it is hardly worthy of comment. Many cases are observed at the hands of different operators in which chill and fever occur before perineal section, even without attempts at dilatation, and especially with it, in which urinary fever is entirely absent after proper subsequent drainage. In cases in which strictures of the scrotal region of the anterior urethra exist as a complication of deep stricture, perineal section enables us not only effectually to dispose of the posterior difficulty, but also to divide such bands as may be within reach of the finger anteriorly. The facility with which the finger may be introduced into the anterior portion of the urethra after a proper perineal section, and the stricture bands in this region located and divided with a probe-pointed bistoury, or even with scissors, is noteworthy. Digital exploration of strictures of the anterior urethra through the perineal wound gives a much better understanding of the relation of strictures of large, or moderately large, calibre to urethral obstruction than can be acquired in any other manner. In cases of deep stricture complicated by perineal fistulæ, the

indications for perineal section are usually peremptory. There are exceptional instances in which a small fistula in the perineum may be closed permanently under dilatation, or after division of strictures in the anterior portion of the canal; but in by far the larger proportion of cases a perineal operation is necessary. Care should be taken to dissect out, as far as possible, all fistulous tracts. Healing is usually very rapid; indeed, it is often surprisingly so, considering the extent of the incisions necessary to lay open or remove the fistulous tract.

It will sometimes occur that cicatricial bands of the urethra will escape division at the primary operation. It is therefore essential to examine the perineal wound carefully from time to time. Should such bands be found, they may be divided at any time prior to the closure of the perineal opening.

In cases in which sounding, after the operation, is performed with considerable difficulty, or in which the operation of sounding, at first easy, becomes difficult, the surgeon is justified in re-opening the perineal wound and seeking for such obstructive bands as have escaped the first operation. If the operation be thoroughly performed in the first place, there should be little or no difficulty in the subsequent introduction of sounds. The anterior urethra, if diseased, should be restored to its normal calibre. It is rather infrequent that the urethra will not admit a 35 French after thorough division of the perineal stricture. It is generally to be taken for granted that the exudate in strictures is entirely without the proper canal of the urethra.

It will sometimes be found, even in very tight perineal strictures, that the pathological changes constituting the stricture are limited almost entirely to the roof of the canal, the floor being partially normal. When, as occasionally happens, the urethra is practically fused together at some point, there being at the same time a practically normal condition of the floor of the urethra, and marked thickening of the roof of the canal just in front of the point of fusion, care should be taken lest the urethra beyond the stricture be missed altogether.

A very important point in the after-treatment of perineal section is the frequency of dilatation. The majority of surgeons dilate too frequently. It is perfectly safe to allow the average case to go without instrumentation for at least a week after operation, and it is rarely necessary to pass instruments oftener than every three days.—From an abstract in *The Therapeutic Gazette, July* 15, 1896.

AFFECTIONS OF THE EYE AND EAR.

87.—THE ELECTRO-MAGNET IN OPHTHALMIC SURGERY, WITH SOME ILLUSTRATIVE CASES.

By F. Buller, M.D., Ophthalmic Surgeon to the Royal Victoria Hospital.

Since the electro-magnet has come into use in ophthalmic practice, we have a ready means of removing many foreign bodies from the interior of the eye which would otherwise baffle surgical intervention and ultimately destroy the vision of one or both eyes. I do not mean to say that every piece of steel or iron can be removed from the interior of the eye by means of the electro-magnet, or that when removed the eye will always make a good recovery, but of this I am certain, viz., that with proper appliances many eyes can be saved which formerly would inevitably have been lost.

I have had no opportunity of using the large magnet of Baab, but can readily believe it might have a larger sphere of usefulness than the small magnet I have been in the habit of using for some years. This instrument is the Bradford magnet, and is fairly powerful in its action, since we have the means of attaching it to the electric lighting current. This is done by means of a somewhat formidable dynamo transformer of the constant current used in the hospital for lighting. The magnet is thus rendered much stronger and more reliable in its action than it used to be when attached to a Grenet battery cell.

I may say, to begin with, I have never yet been fortunate enough to extract a foreign body from the eye which I could not accurately locate before operating. But, on the other hand, I never failed to extract any fragment of iron or steel which I could see before making the attempt to remove it. I would infer from this that the point of the magnet must be brought very near to, or in actual contact with the foreign body, before it will exert sufficient magnetic attraction to withdraw it from the eye. If this be true, it is easy to understand why the chances of success are but slight when the exact position of the foreign body is unknown. Small particles of metal which have not passed beyond the iris or lens can often be seen by the naked eye or with the aid of focal illumination, but those which have entered the vitreous chamber can only be seen with the ophthalmoscope.

There is one practical point which I wish to emphasize, namely, the sooner an expert examination can be made after the accident, the better will be the chance of making an accurate diagnosis. The transparent media of the eye are likely to become clouded, more or less rapidly, after such accidents, and a delay of some hours or days may make all the difference between success and failure.

I believe that a large majority of injuries to the eye occurring amongst metal workers are inflicted by quite small fragments of steel, chipped from the edge of hammer or chisel. These commonly vary from two to four millimetres in length and are much less in breadth and thickness. Larger fragments, from a quarter to half an inch or more in length, are mostly derived from the metal being wrought upon. Such larger masses, when they penetrate into the interior of the eye, often inflict such extensive injury that the eye is obviously destroyed, whether the fragment can be removed or not. It is, therefore, the injury caused by small fragments which chiefly concerns us in our efforts to save the eye from destruction. Foreign bodies such as these when they pass through the lens do not usually cause much, if any, bleeding into the eye, and for some time afterwards the lens and vitreous may remain sufficiently clear to admit of efficient ophthalmoscopic examination which will often suffice to locate the intruder and thus render its extraction an easy task, if it consists of iron or steel. Fragments which penetrate through the sclerotic are apt to occasion more or less abundant extravasation of blood into the vitreous (a very important diagnostic point if the external wound be very small, since a small particle merely wounding the sclerotic would not cause intra-ocular hemorrhage); but even then the ophthalmoscope will sometimes discover the position of the foreign body, and the magnet itself may be used to confirm the diagnosis, as in Case 5.

The introduction of the small magnet point into the vitreous chamber does not, with proper care, seem to be followed by injurious inflammatory reaction, and although augmentation of existing opacity in the vitreous may follow its use, this soon clears up if there has been no septic infection.

The Operation.—Whenever a fragment of metal, such as can be attracted by the magnet, is discovered in the eye, we have to consider the best means of reaching it. The cases I now report are typical, showing as they do what may be done in three classes of injury:—(*a*) Where the foreign body is in the anterior chamber; (*b*) Where the foreign body is still engaged in the sclerotic, though mostly within the eye; (*c*) where the foreign body is lodged in the vitreous chamber. [The illustrative cases have been omitted here].—*Montreal Medical Journal*, 1896, *p.* 236.

88.—GONORRHŒAL CONJUNCTIVITIS.

By HERBERT J. HOPKINS, M.D., C.M.E.-E., Pittsburg.

[In his paper on "Gonorrhœal Inflammation," Dr. Hopkins thus speaks of gonorrhœal conjunctivitis :]

In this paper gonorrhœal conjunctivitis is first discussed in order to show the limitations of treatment, it being of course understood that gonorrhœal inflammation, whether of the urethra, vagina, or conjunctiva, is essentially the same disease, running the same course in about the same time and reacting in the same manner to like reagents. Gonorrhœal conjunctivitis is the most intractable and destructive disease to which the eye is subject, and for this reason, as well as for its great frequency, it has received minute attention, and this in a locality open to free inspection and where errors in treatment are quickly followed by most disastrous consequences. It is caused by the deposition upon the conjunctival membrane, in whatever way, of gonorrhœal discharge, and is of course itself communicable, *e.g.*, the discharge from one eye being capable of setting up the same disease in the other; or of causing a specific urethritis. It runs a definite self-limited course lasting from four to six weeks, and it is impossible when it is fully developed to cut it short, though its severity can be mitigated and its phenomena controlled to such an extent as to preserve the affected tissue intact. If treatment be resorted to, however, immediately after exposure, the infecting virus can be readily destroyed and the disease prevented. This is best accomplished by nitrate of silver in a solution of from 5 to 10 grains to one ounce of water applied freely to the part affected. It is open to the objection of causing considerable burning pain, and any excess should be neutralised by a weak solution of sodium chloride.

Gonorrhœal conjunctivitis begins like, and in its earliest stages is almost indistinguishable in appearance from, simple acute conjunctivitis, but it soon assumes its own characteristic features. During the initial stage, lasting about a week, before the discharge has changed to the thick creamy character of the second stage, reliance is placed upon frequent cleansing with weak non-irritating solutions, *e.g.*, of boracic acid alone or combined with perchloride of mercury, 1 to 10,000, or with peroxide of hydrogen. It is well, too, to begin the use of iced cloths (pieces of lint two inches square changed every two minutes from a block of ice to the lids even in this early stage, and when once begun they are to be continuously employed night and day, a duty which taxes the energy of two nurses. In selected cases, leeches applied to the temple or to the side of

the nose are also of great benefit. It is not till the second stage, that of free discharge, is established that the stronger applications, *e.g.*, of nitrate of silver, are allowable, nor are they then if there be much hard, brawny swelling.

It cannot be too clearly understood, from its bearing upon the urethral inflammation, that the disease is a self-limited one, the duration of which we cannot shorten, though it can readily be prolonged. The proper treatment is essentially a cleansing, sedative one during the acute stages. Astringent solutions, *e.g.*, of tannin, zinc, alum, &c., are not of noticeable benefit before the final stage, at which time they are invaluable, restoring the relaxed and thickened membrane to its normal condition.

Though it is not directly involved in the inflammatory process, the greatest danger in this disease is through the cornea, and its condition is a vital index by which to gauge the measure of our success. Its nutritive supply being interfered with by the inflammation of the surrounding tissues, its substance yields readily to the corrosive action of the discharges, the first evidence of trouble noticed being usually at the sclero-corneal junction in the form of a faint nebulous zone of infiltration, which speedily breaks down, forming a trench whose depth and length rapidly increase until perforation occurs, and even the whole cornea becomes detached and drops off. This ulcerative process may begin very early in the disease or not till near the end. As special measures to save the vitality of the cornea, hot fomentations are sometimes indicated instead of the iced cloths, and even scarification of the conjunctiva to deplete the strangulated tissues.

In children the well-known tendency of inflammation of mucous membranes to expand itself chiefly in the direction of cell proliferation and consequent free discharge is exemplified in this instance. In early life gonorrheal conjunctivitis (ophthalmia neonatorum) is characterised by the very abundant creamy discharge and but comparatively little of the brawny swelling so noticeable in the adult, and as a consequence stronger and more frequent applications of nitrate of silver are recommended; but iced cloths to reduce swelling are not so urgently indicated.

It is important to note, from its bearing upon similar cases of urethritis, that under the classical term gonorrhœal con junctivitis are grouped the simple purulent cases arising from infection from healthy abscesses, leucorrhœal discharges, and various chemical irritants in which the gonococcus has no part. These are comparatively mild in character, of shorter duration, and yield readily to antiseptics.—*Medical Record*, *May* 23, 1896.

89.—THE TREATMENT OF IRITIS.

By Henry Juler, F.R.C.S.,
Surgeon to the Royal Westminster Ophthalmic Hospital, &c.

[The following is taken from Mr. Juler's paper on "Iritis: Its Pathology and Treatment."]

The first canon in the treatment of iritis from whatever cause arising is a negative one—to do no harm—by the use of astringents. If there be any doubt about the diagnosis, the proper course is to let the astringent wait and to prescribe a mydriatic for a few days until the truth declares itself. As I have said, many eyes are irreparably injured by the neglect of this simple precaution.

The second step in treatment of any case of plastic iritis is to aim at the complete dilatation of the pupil. This is of paramount importance and should be done immediately the condition is recognised. The object of this has already been indicated in my remarks upon the pathology, viz., either to prevent the formation of plastic adhesions to the lens capsule, or endeavour to break them down if recently formed, to keep the inflamed iritis at rest by paralysing the sphincter, and to diminish the amount of the plastic exudation by contracting the blood-vessels of the iris. The best mydriatic is undoubtedly atropine sulphate. It should be used in the form of drops (1 per cent. solution) instilled into the palpebral sac every three or four hours, or as an ointment of the same strength. If adhesions have already formed and are recent it is well to use the mydriatic every hour for six consecutive hours; this treatment is likely to break them down, leaving a few dots or a ring of pigmented lymph upon the capsule which, however, may partially or entirely disappear. If the adhesions are of sufficient age to have become firmly organised the atropine will not break them down, but it will still cause dilatation of the unattached portions of the pupil and so prevent further complications. This free use of atropine may give rise to local irritation in the form of irritable conjunctivitis, swelling, and erythema of the eyelids and surrounding region. In some cases this is very severe. When this complication arises the atropine may be changed for sulphate of duboisine, 0·5 per cent., or a solution of scopolamine, of similar strength. These drugs sometimes exert a less irritating effect.

Systemic poisoning may also occur from the use of atropine, and is recognised by heat and dryness in the mouth and throat, difficulty in swallowing, thirst, loss of appetite, faintness, and even diarrhœa and delirium. An efficient way of preventing this is to let the patient press the puncta lachrymalia at the

inner canthus with his finger for a few minutes after each instillation, so as to prevent the drug from passing down the nasal duct.

The next indication in treatment is to relieve local pain and congestion. One of the best drugs for this purpose is cocaine hydrochlorate. It may be used in conjunction with the atropine just mentioned in the strength of 2 per cent. solution. It not only assists the atropine in dilating the pupil, but is a powerful local sedative. Those who suffer from the agonising pain of rheumatic and gouty iritis know too well the value of this precious addition to our pharmacopœia. It is of all things most important in iritis that the patient should be enabled to get sound sleep. Hot fomentations come next as valuable adjuncts to these drugs. Large pads of cotton wool saturated with water as hot as it can be borne are to be placed over the closed eyelids, covered with oiled silk, and then with several layers of warm dry Gamgee tissue lightly bandaged on so as to keep up the warmth of the fomentation. If pain still persists and redness shows no sign of abatement, we now resort to local blood-letting. Three or four leeches should be applied to the temple of the affected eye as near to the outer canthus as they will allow, or an equal withdrawal of blood by means of the artificial Heurteloup leech, is one of the most marvellous aids we possess in the relief of pain and the control of inflammation. In persistent cases where the pain continues, and particularly when the tension of the globe seems to be rather increased, the operation of paracentesis of the anterior chamber often causes immediate relief. The operation is very easily performed, and that without danger of wounding the iris or lens by using the paracentesis needle. By thus relieving the tension of the eye the globe seems to be enabled to better absorb the atropine and cocaine, and so dilatation of the pupil and cessation of pain and redness is often a marked result. The relief of pain, in all cases, is so very important, inasmuch, as without it, the patient is unable to sleep, at least, for any length of time, and prolonged healthy sleep is most essential because it gives rest to the eye. If, therefore, the pain is not subdued by the aforesaid remedies, we must at once resort to sedatives in the form of a hypodermic injection of morphia, bromide of potassium, and chloral hydrate by mouth, or some other and equally efficient remedy.

The third important point is the treatment of any constitutional dyscrasia that may be found associated with the iritis. In the iritis just described as occurring in the early stages of secondary syphilis there is no remedy so efficient as the internal administration of mercury. This is the most common form of syphilitic iritis and one in which the

beneficial effects of this drug are most marked. I usually begin the treatment by giving two grains and a half of blue pill night and morning. Any other form of administration such as the hypodermic injection, the mercurial vapour bath, or the inunction by the skin, may be equally efficient, or even better than this, but I have, from old Lock Hospital experience, become partial to the old blue pill. The drug must be continued day by day and week by week, until the iritis and all the collateral signs of syphilis have disappeared. The only sign for its temporary cessation is that of commencing ptyalism. If the gums become spongy or sore the mercury must be stopped for a time and a mouth wash of chlorate of potash used until the soreness has disappeared. Certain important points in the administration of mercury are to keep the gums as healthy as possible, to avoid taking a chill, and not to take fruit or alcohol in any form. If the iritis is of an acute character, indeed in any form, it is well to keep the patient in bed, and to give him warm baths so as to promote the action of the skin.

In the second or gummatous form of iritis which has been described as occurring in the later secondary stages of syphilis the administration of mercury is still indicated. These cases are more rare and generally confined to one eye. I always give iodide of potassium and decoction of sarsaparilla in addition to the mercury, and the symptoms rapidly subside.

In the inherited form of syphilitic iritis we seldom find the iris suffering alone, it is usually sharing the burden with the cornea, the ciliary body, or the choroid. The iritis is more of a chronic variety. Mercury is well received by the patient and very efficient in its action. The patient need not generally be kept in bed, but should be well nourished, encouraged to take exercise in the open air, and to avoid alcoholic drinks of all kinds.

In the rheumatic and in the gouty forms of iritis the constitutional conditions are still of paramount importance. The pain in these cases is usually very intense, and requires all the local aid which has just been referred to, but the general condition of the system must not be neglected. The patient should, if possible, be kept in bed. A brisk purge of calomel and rhubarb followed by a saline aperient, administered. Then the salicylate of soda in doses of ten grains administered every three or four hours will be found to have a marvellous effect in reducing the severity of the attack. This may be continued for two or three days according to the degree of abatement.

The free action of the skin should be promoted by hot-air baths once at least in twenty-four hours. Great care should be taken to prevent a chill. When only one eye happens to be affected the other eye is allowed to go unshaded so that the

affected eye is irritated by the influx of light to the sound eye. Both eyes should be shaded, both atropised, and the disease should be treated as one of the greatest importance, and requiring the greatest promptness and activity on the part of the medical attendant.

In the chronic rheumatism cases I find the iodide of potassium and bark a good successor to the salicylate.

In gouty cases I attach more importance to the patient's dietary and mode of life than to any medicines he may take into his alimentary canal. As I have said, I believe many of the cases of iritis which we now describe as idiopathic are in reality due to a gouty condition of the blood. Healthy exercise in the open air, a very moderate use of meat, white meats in preference to red, abstinence from all food-stuffs which give rise to dyspepsia, the avoidance of all alcoholic drinks while the eye is inflamed, and extreme moderation afterwards. Regular habits, *i.e.*, meals at regular hours, not to have late suppers, daily evacuation of the bowels, not to take anything to eat or drink between meal times, and always to secure a good night's rest.—*Medical Press and Circular, May* 13, 1896.

90.—THE EXTRACTION OF IMMATURE CATARACT.

By Dr. De Schweinitz.

In the *Polyclinic* of April 18, 1896, De Schweinitz states that practically all ophthalmic surgeons are agreed that about the sixtieth year the lens may be extracted safely, even if it is in part unclouded, because, if Schweigger is correct, at that period of life the usual criteria of ripeness are erroneous, accommodation being annulled by physiological changes in the lens. Whether we may with equal propriety extract immature cataract in younger individuals is still a matter of dispute, and it is much to be desired that some rational and safe procedure may be devised to relieve the patient from the long period of semi-blindness which often exists while a senile cataract is slowly advancing to maturity. Not only is this stage present in senile cataracts, but also in other types of opacification of the crystalline lens—namely, zonular cataracts, immature traumatic cataracts, and the partially-formed cataracts in young people.

Recently this subject has been discussed at some length by Dr. John E. Weeks in a paper entitled "The Operative Treatment of Immature and some Forms of Zonular Cataract," which was presented to the Baltimore meeting of the Ophthalmological Section of the American Medical Association. Twenty-five cases, without a failure, were reported, and the results appeared

to this writer to be as favourable as those ordinarily obtained by the removal of cataract at the stage of maturity.

It is interesting to note one or two of the comments on this paper. Knapp, for example, refers to the fact that the ripening operation unfortunately is often done without effect, often provokes iritis, and has even been followed by plastic and purulent irido-cyclitis. He, therefore, if patients will not wait, prefers the risk of dealing with the remnants by secondary discission to the double operation of ripening and extracting the lens. Hotz, of Chicago, describes his experiences with ripening processes as unsatisfactory, either because the lens did not ripen, or because his efforts were followed by cyclitic irritation, and concludes that the extraction of immature cataract does not involve greater danger than the removal of a fully mature cataract, provided there is not a very large amount of absolutely transparent lens matter ; and, when there is, the patient's vision is usually still so good that operation is not urgently demanded. Not a little interesting are the remarks of Dr. White, of Richmond, who, as we all know, is a strong advocate of one form of ripening operation. He says : — "I never ripen immature cataract if the case will wait for nature's processes, and then only if the patient is under 60 years of life ; over 60 years of age, I extract without waiting for maturity."

Concerning the method of extracting an unripe cataract :— Knapp, Weeks, and other operators of skill and experience, employ the simple extraction, precisely as they would for an uncomplicated mature cataract. In all his cases of unripe cataract he has used the combined method, sometimes with a preliminary iridectomy, with the exception of one instance, in which he did simple extraction. He prefers iridectomy because it has seemed to him that prolapse of the iris, from the danger of which the best operator is not free, added to the increased danger of cortical remnants, multiplies unnecessarily the risks of the patient, and, moreover, that the toilet of the wound was more easily accomplished. Perhaps with wider experience and increased skill his opinion on this subject may change. Certainly the experience of Weeks indicates that simple extraction is satisfactory.

Concerning the opening of the capsule : — Theoretically, peripheral opening of the capsule, and, therefore, confining cortical remnants, is the proper procedure. Practically, with the exception of one case, he has always freely opened the capsule by a T-shaped flap, and, usually, immediately at the conclusion of the operation, has instilled a drop of sterilised atropine solution. He has avoided iritis, except in one instance ; in this case, however, there was trauma during the process of healing.

Concerning irrigation of the anterior chamber :—He believes this to be a dangerous procedure, and never employs it. Occasionally, in clearing the wound, he has made slight pressure on the sclera above the corneal section with a sterile spatula, and allowed his assistant to flood the wound-edges with a tepid boric acid solution or a sterile normal salt solution, but he has never, in recent times, injected these fluids into the chamber. Surgeons with large operative experience report most satisfactory results from irrigation of the anterior chamber, particularly Lippincott, of Pittsburg, who practises irrigation as a routine matter; but the author is not inclined to burden the extraction of cataract with an additional manipulation when equally good results are obtainable without its use.

If De Schweinitz were to sum up his belief in regard to the extraction of immature cataract, he would say with Knapp, with White, and probably with all surgeons, that he prefers always to wait for maturity, or for that time of life when the lens, even though immature in the ordinary sense of the term, will cleanly leave its capsule. But he prefers the extraction of immature cataract (combined section) to the performance of an operation for ripening. He performs preliminary iridectomy if functional examination determines that there are complicating circumstances, as, for example, in the cases of high myopia, and in two of his cases of immature nuclear cataract in which the tension of the eyeball was diminished and there was tremulousness of the iris, indicating probable vitreous changes.—From Abstract in *The Therapeutic Gazette, August* 15, 1896.

91.—REMARKS ON THE MANAGEMENT OF GLAUCOMA.

By Leartus Connor, A.M., M.D., Detroit, Mich.

[The following is taken from Dr. Connor's paper, read before the Michigan State Medical Society :]

As to the value of iridectomy in chronic simple glaucoma, the studies of Dr. C. S. Bull are very conclusive. He gives the history of 90 cases treated during a period of seventeen years, all of which he was able to study for a considerable period after operation. Vision was temporarily improved in 2 cases in both eyes, in 6 cases in one eye; but in all the 8 cases a steady loss of vision and a narrowing of the visual field set in and continued progressively so long as the patients remained under observation. The vision remained unchanged in 8 cases in both eyes, and in 20 cases in one eye. Vision grew steadily

worse in 40 cases in both eyes, and in 40 cases in one eye. Vision grew rapidly worse after operation in 2 cases in both eyes, and in one eye in 8 cases. Of the 180 eyes, only ten eyes were at all improved by the iridectomy, and these steadily grew worse. In thirty-six eyes the vision was unchanged for a year after the iridectomy. In 120 eyes vision grew steadily worse after iridectomy, while in twelve eyes vision grew rapidly worse after iridectomy. It is thus clear that in chronic simple glaucoma iridectomy is far from a brilliant success.

Of the comparative value of eserin and iridectomy in simple glaucoma, an excellent study is given by Drs. Zentmayer and Posey ("Will's Eye Hospital Reports," Vol. 1). One hundred and sixty-seven cases are reported from the service of Drs. Norris and Oliver. Sulphate of eserin was used in all cases when well borne and was continued for years. At first the doses were small, being increased or diminished according to results. The cases irritated by its use were treated by iridectomy. When well borne it improved central visual acuity in 62·16 per cent. of cases, while it retained vision unaltered in 21·62 per cent.; in 16·21 per cent. it was powerless to prevent decrease of vision. In 85 per cent. of the cases it diminished intraocular tension. The visual field improved in 50 per cent. of the cases; remained stationary in 18·75 per cent., and steadily diminished in 31·25 per cent. When well borne, eserin kept the fields improved ten months, and vision fifteen months. In cases not improved fields remained stationary for three months; vision for thirteen months. Iridectomy improved 60 per cent. of cases; did not change 20 per cent.; failed to prevent loss of visual acuity in 20 per cent.; diminished it in 10 per cent. Tension improved in 90 per cent. of cases. The improved visual field lasted on an average eighteen months; the degree of visual acuity twenty months after iridectomy.

The facts show that it is advisable to employ eserin, when well borne, for a month; if the field of vision has diminished nothing further can be hoped for from eserin, and an iridectomy must be done. If there be an improvement of the visual field, eserin should be continued, as there is reason to expect a beneficial action for ten months upon the extent of the visual field, and fifteen months upon the visual acuity. In half the cases we may expect iridectomy will check the course of the disease for eighteen months. Ten per cent. of the cases will not be benefited by either eserin or iridectomy, or both. Both successfully reduce intraocular tension. Thus in simple glaucoma we have the following elements of management:—(1) In every case make the nutrition of the entire body as perfect as possible, by removing defects of excretion or secretion; disturbances of digestion; constitutional dyscrasias,

as gout, rheumatic gout, syphilis, &c. Medicines avail much, but wise regulation of diet, exercise, sleep, bathing, &c., will generally be most efficient. (2) Place the affected eye under the influence of eserin, if well borne, and keep it there so long as it controls the tension and prevents a diminution of the field of vision. This failing, (3) do a large upward iridectomy, and follow with eserin, if well borne, while any manifestations of the attack continue. This failing, a sclerotomy anterior may be done. (4) Correct and keep correct all defects of refraction and muscular balance.

Acute inflammatory glaucoma presents a remarkable likeness to acute inflammatory gout, just as simple chronic glaucoma resembles rheumatic gout. The following is given because the attack could be studied from inception to close. The management of acute inflammatory glaucoma by constitutional remedies, eserin and iridectomy, is satisfactory to patient and surgeon if it can be applied promptly at the onset of the attack. Subacute glaucoma differs mainly in degree from the acute. We find moderate degrees of vascular obstruction and some sharp pain; an enlarged and sluggish pupil; increased tension; shallow anterior chamber; hazy vitreous; pitted optic disc, in varying degree.

I have met many cases from syphilis, that were successfully managed by the use, in a vigorous manner of antisyphilitic in addition to the local treatment. But in other cases such treatment fails and resort must be had to iridectomy. If the cases can be kept under close observation, and the fields of vision do not diminish, and other symptoms improve, it is safe to wait till eserin and constitutional agents are clearly futile, ere doing an iridectomy. But if the case can not be carefully watched the iridectomy should be done without delay—except in case of a degenerated iris, when the operation is disastrous.

Absolute glaucoma presents a notable picture:—Eyeball of stony hardness; devoid of all expression; blindness complete; pupils widely dilated and immovable; pupillary space filled with the glistening opaque lens; sclerotic of marble whiteness streaked with the tortuous and enlarged ciliary vessels; the glaucomatous process has done its worst. No treatment remains except such as will render the patient more comfortable, which may necessitate a sclerotomy or an iridectomy or enucleation.

Glaucoma secondary to other local diseases or injuries in the eye must be managed according to its specific indication, the object in each case being the restoration of a normal circulation through the chambers of the eyeball. Pertinent to the management of glaucoma, is a brief note on the technique of the operations for its relief. In glaucoma the iridectomy differs materially

from that done for optical purposes in that it needs to be as large as possible, and the iris removed closed to its scleral attachment. Owing to the shallowness of the anterior chamber, great care is needed in making the corneal section, to avoid wounding the lens; otherwise grave consequences follow. I have found the use of Von Graefe's cataract knife most suitable for this purpose, as by it one can skirt the angle of the anterior chamber, keeping in the sclerotic, and make a section as large as desired. The incision should always be made in the sclera.—*Journal of the American Medical Association, August* 29, 1896.

92.—SQUINT OPERATIONS.

By Patrick W. Maxwell, M.D. Edin., F.R.C.S.I.,
Assistant Surgeon to the National Eye and Ear Hospital, Dublin.

[The following practical conclusions are from Mr. Maxwell's paper, read before the meeting of the British Medical Association, 1896:]

(1) The angular measurement of squints is to be preferred to all others as being the most accurate. The angle gamma should also be measured, otherwise the exact reduction required cannot be known. With young children who will not sit still at the perimeter, Priestley Smith's tape measurement may succeed.

(2) The refraction and vision of each eye should be ascertained, and the immediate effect of glasses on the longe and prox. angle, and on the visiou, should be noted. If there is any doubt about the refraction atropine should be used.

(3) Where the time can be spared, glasses of full correction should be ordered for constant use for about two months. If the patient cannot relax for distance, atropine should be used till he can.

(4) If, after two months of glasses, the squint, including angle gamma, is reduced below 8°, a more extended use of glasses should be tried, and orthoptic exercises employed. But if from 8° to 20° of squint remain, a single tenotomy should be performed with a more or less free division of side attachments. If the result is pretty near the full correction the patient should be seen for a few weeks at frequent intervals. The glasses being taken off or left on for even one day makes a difference in the final result. When an operation is performed on one who has not previously worn glasses a too small result may be increased by their aid, but a too great result cannot be remedied. But it is a matter of clinical observation that in a case where glasses

have already produced their full effect, they will again, after operation, produce a further reduction. Therefore the patient who has worn glasses before operation has this advantage, that, by continuing to wear them, by having their strength reduced, or by stopping them altogether, he can have the operative effect increased or diminished.

(5) No second operation should be performed for at least three weeks. If after the first operation 10° or more remain, a tenotomy on the other eye should be performed, and subsequently regulated by glasses.

As the average effects of two consecutive tenotomies and of a tenotomy and advancement are the same, it is a matter of taste which plan is adopted in squints between 20° and 25°. But where outward movement is restricted I should, from theoretical reasons, as well as in deference to the clinical experience of others, prefer an advancement. Where the squint is above 25° a tenotomy and more or less extensive advancement should be performed, for though two consecutive tenotomies might suffice, yet they might not. Any remaining squint, if between 8° and 20°, should be treated by a simple tenotomy, and, if over 25°, by tenotomy and advancement.

(6) It is to be noted that these suggestions apply to cases that have worn glasses. If glasses have not been worn we must be considerably more cautious.

(7) The cases which wear glasses permanently seem to obtain a greater improvement in vision, and, on the whole, to give the better ultimate results. But often in deference to the wishes of the patient or friends, we are urged to give them up after a time. This should only be allowed where the ametropia is slight, and the refraction of the two eyes does not differ by more than 1 D.

On the other hand, glasses as a permanency are indicated where a convergence too small for operation remains, where the vision of one or both eyes is improved by them, and where the refraction of the two eyes differs by more than 1 D.

(8) Sutures should be boiled before use, and should not be left in much more than a week. By causing inflammatory softening, and then stretching of a new attachment, they may, as I have shown, largely undo the benefit of an advancement.

I have not tried stereoscopic exercises very often, and so far have only succeeded perfectly in two cases; still I think every intelligent patient should get the chance.

Berry's test is a rapid and conclusive proof of perfect binocular vision. Hering's drop test is more troublesome, but it has the advantage of indicating the presence of partial binocular vision. The patient will make a few mistakes with both eyes, but will make more if the squinting eye is covered.—*British Medical Journal*, September 26, 1896.

93.—CHRONIC TYMPANIC VERTIGO.

By CHARLES H. BURNETT, M.D., Aural Surgeon to the Presbyterian Hospital, &c., Philadelphia.

The greatest average of success of the treatment by excision of the membrana tympani and the two larger ossicles is seen in the relief of the vertigo; the lowest in the deafness. It is thus shown that chronic tympanic vertigo can be relieved by total excision of the membrana and the malleus, the incus being allowed to remain in position; but as this operation is invariably followed by more or less inflammatory reaction, I have abandoned it for simple incision in the membrana and removal of the incus, which liberates the stapes most completely, and is never followed by reaction of any moment.

I now present notes of 16 additional, unselected, consecutive cases of chronic catarrhal deafness, tinnitus, and tympanic vertigo (so-called Ménière's disease) in which the vertigo was the prominent and annoying symptom, and chiefly for relief of which the operations were performed. Most of these cases before seen by me had been treated with internal remedies for "neurasthenia," "biliousness," &c., but without any relief, the lesion in the ear not having been recognised as the cause of the vertigo. In all of them, except two, my operation for relief consisted in removal of the incus only. This liberated the stapes, the inward pressure of which, by the retraction of the membrana, malleus, and incus, I believe to be the prime cause of the tympanic vertigo.

Tympanic vertigo is a term I suggested some time ago for that form of ear-vertigo produced by chronic catarrhal otitis media. It is characterised by paroxysms of increased tinnitus, vertigo, and nausea, with, at times, reeling, falling, and vomiting, but no loss of consciousness. To this vertigo the name of Ménière's disease has been frequently very erroneously applied. The term Ménière's disease is now limited in its application by aurists to disease of the internal ear, a rare malady, however.

In every case of so-called chronic catarrh of the middle ear there is a tendency to thickening, contraction, and stiffening of the mucous membrane lining the drum-cavity and covering its contents. This tends to retraction of the membrana tympani and the ossicula through contraction of the tensor tympani muscle, with consequent impaction of the stapes in the oval window. The membrane of the round window, which normally furnishes a yielding point to the inward pressure of the stapes upon the labyrinth-fluid, being thickened and stiffened by the chronic catarrhal process in the tympanic cavity, fails to yield to the retraction of the stapes, the labyrinth-space is thus compromised, the labyrinth-fluid and the motor filaments of the

auditory nerve compressed, the cerebellum reflexively irritated, and motor disturbances in equilibrium of a vertiginous form are paroxysmally excited. The paroxysmal nature of the tympanic vertigo is due to the fact that the above-described retraction and impaction of the larger ossicula with the stapes vary with the catarrhal state of the nasopharynx, the general health of the patient, and the condition of the atmosphere.

The physical causes of the attacks of vertigo being as above described, it seems rational to suppose that, if this retractive power over the stapes could be permanently overcome, the vertiginous paroxysms would be permanently checked. This can be effected best and most safely, as already stated, by surgical removal of the incus only. [Illustrative cases are then given.]

All the operations were performed upon the etherised patient, and, the ear being previously mopped or syringed with a bichloride solution, was illuminated by means of a six-volt electric lantern held on the operator's forehead with the ordinary forehead-band, like that used for holding the forehead-mirror. The current was supplied by a small portable storage battery. No inflammatory reaction with discharge ensued after any of the operations excepting in Case 11, in which total excision of the membrane was performed; but, as stated already, I have abandoned that operation in such cases. In Case 21 there was some pain, but no discharge from the ear, for a few days after the removal of the incus, as may be learned by reference to the notes.

Most of the cases (12) presented the ordinary symptoms of chronic catarrh of the middle-ear, without symptoms of previous purulency. Three cases, however, presented symptoms, as well as the history, of having suffered from chronic purulency of the middle ear; two with large perforations in the membrana, with cicatrised edges and cicatrised drum-cavity, and one with a cicatrised perforation and partly destroyed malleus. One case presented a condition of active purulency in the attic at the time of the operation.

The following synopsis of results of the operation in these 16 additional cases of chronic tympanic vertigo shows that the highest average of success was attained in the relief of vertigo, as in the first series. In the incidental results of the operations the tinnitus shows a higher average of relief than the deafness. In Cases 11 and 24 there was no relief in any respect.

Results.—Vertigo relieved at once in 10 cases; vertigo relieved gradually in 4 cases; vertigo unchanged in 2 cases; tinnitus lessened in 13 cases; tinnitus unchanged in 3 cases; hearing improved in 9 cases; hearing unchanged in 7 cases.—*American Journal of the Medical Sciences, October*, 1896.

94.—ACUTE OTITIS MEDIA AS A COMPLICATION OF TYPHOID FEVER.

By D. A. Hengst, M.D., Laryngologist and Otologist to Mercy Hospital, Pittsburgh, Pa.

[The following is a part of Dr. Hengst's paper:]

The most usual mode of invasion is by extension of the inflammation from the mouth and nasopharynx through the Eustachian tube to the tympanum, and whenever this inflammation is present in the nasopharynx the patient is in constant danger of otitis. That it is of a microbic origin has been demonstrated. In typhoid fever, and especially during the third or fourth week, when the secretions of the nose and naso-pharynx are in an abnormal condition, these microbes multiply very rapidly, and it is therefore of the highest importance that the nose and nasopharynx be kept thoroughly antiseptic.

Symptoms.—There are deep-seated pain and tenderness on pressure below the auricle, a feeling of fulness, pulsation, and, in some cases, tinnitus. On examination of the membrana tympani, vascular injection, especially along the handle of the malleus, and in some cases, though not in every one, bulging of the membrana tympani. There is also more or less well-marked deafness. In some cases of typhoid fever there is a neuralgic condition of the middle ear in which the pain is very severe. Acute otitis, however, can be distinguished from this by the want of congestion of the membrana tympani in neuralgia, absence of pain on deep-seated pressure below the auricle, and the absence of other signs as recognised by the speculum. Neuralgic pain is also of a more paroxysmal nature. Very often, on account of the semi-comatose condition of the patient, the disease is not recognised until there is a rupture of the membrana tympani and the consequent discharge of pus. This rupture, as in acute otitis from other causes, may occur in a few hours after seizure, but more frequently it occurs after the pain and other symptoms have lasted two or three days. If the membrana tympani is examined before the rupture takes place, bulging and excessive congestion of the membrana will be noticed. If, after the rupture, the pus is carefully syringed away, the ruptured spot, which we find in the posterior part of the membrane, above the centre and near the outer wall of the meatus, can generally be seen. This is where it usually occurs, and is therefore not difficult to heal if properly treated. We are all aware that we very seldom see a case of chronic purulent otitis which is attributed to typhoid fever as the cause. Should this rupture occur in Shrapnell's membrane, the prognosis as

regards cure would be a more serious matter. Inflammation of the mastoid process, as in all other cases of median otitis, is merely an extension of the suppurative process from the middle ear, and is a very rare complication if the primary otitis is properly managed.

Treatment.—As the object of this paper is to discuss the frequency of acute otitis as a complication of typhoid fever, a few words in regard to treatment will be all that is necessary. If the case is seen during the early or hyperæmic stage it is my custom to apply a leech in front of the tragus; or, if the pain extends to the mastoid, it may be applied in that region. In addition, the instillation into the ear of a warm solution of boric acid, or gently syringing the ear with the same, may be followed by prompt relief, and in many cases prevent suppuration. In some of my cases the use of cold water through the Leiter coil has been beneficial. The ear should be frequently examined, and as soon as the bulging of the drumhead is found it should be incised; after this the secretion should be forced out by the Politzer method; this should be done at frequent intervals, and, in addition, the nose and nasopharynx should be thoroughly sprayed with a warm saturated solution of boric acid in all cases where the patient is not too comatose to prevent its use. In most of the cases the discharge will cease in a few days with this kind of treatment; if not, then, after thoroughly cleansing and drying the ear, the insufflation lightly of boric acid or some other of the antiseptic powders will usually result in a cure.

My studies have led me to believe that very few cases of acute otitis media, when complicating typhoid fever, terminate unfavourably—that is, in nearly all cases perfect hearing is the result; also, that mastoiditis is very rare unless the case is not properly treated during its earlier stage; and that in all cases of typhoid fever the condition of the nose and nasopharynx should be carefully examined at frequent intervals, and kept thoroughly antiseptic by either a mild bichloride of mercury or saturated solution of boric acid, used with the atomiser, if the condition of the patient is such as to make it possible.—*New York Medical Journal, June* 6, 1896.

95.—MÉNIÈRE'S DISEASE AND ITS TREATMENT.

[The following is an editorial from the *Medical Record*, August 8, 1896:]

The complex of symptoms which goes under the name of Ménière's disease often causes the patient a great deal of distress and the physician much anxiety, on account of the painful and

obstinate nature of the symptoms. Ménière's disease has been written about to a very great extent since Ménière himself published his original article in the *Gazette Médicale de Paris*, in 1861. A recent monograph upon the subject, by Dr. Fränkel-Hochwart, contains nearly six pages of bibliography. The result of all this research has been to establish the fact that the vertigo and other accompanying symptoms in Ménière's disease are due to an irritation of the vestibular and cochlear branches of the eighth nerve. This irritation, it has been shown, is due to very different causes. It may be a syphilitic exudate or some other inflammatory process in the internal ear, or, as is more commonly the case, a chronic inflammatory disease of the middle ear with secondary involvement of the labyrinth. Apparently there are cases of Ménière's disease also in which the condition is functional—cases in which no evidence, at least, of real organic disease can be found, and in which the convulsibility of the epileptic constitution shows itself; or cases of neurasthenia in which the point of least resistance is the eighth nerve. The causes and the pathological changes underlying the symptoms that go by the name of "Ménière's disease" are indeed so various that it is somewhat unfortunate that a specific name has been given to the condition, since neither the periodicity of the attacks nor the progressiveness of the disorder—in fact, no symptom aside from the vertigo—may be considered constant in persons who suffer from this malady. This fact is abundantly shown by a study of Hochwart's classification. He tells his readers that there are four different kinds of Ménière's disease, with some nine different sub-divisions of these four classes. Thus, we have the epileptiform, due to a sudden hemorrhage into the labyrinth; the traumatic form, in which, perhaps, a fracture or some direct injury of the ear structure occurs. Then we have the progressive form, which develops on the basis of a previous ear disease. This type of Ménière's disease is sub-divided in accordance with the location of the ear trouble and in accordance with its chronicity or acuteness. Ménière's disease may develop on the basis of lesions occurring either in the external ear, on the one hand, or in degenerative diseases, involving the nucleus of the nerve, on the other. Still another form of Ménière's disease is described as occurring as the result of mechanical causes, such as washing out the ear, catheterisations, sea-sickness, and so on. And, finally, there are attacks of Ménière's disease which are called pseudo-attacks, and which are due to hysterical, epileptic, or migrainous neuroses.

The conclusion which one would most naturally and logically reach, from a survey of the literature on this subject, is that the term "Ménière's disease" had much better be abolished, and

the term "aural vertigo" be used in its place. The physician, then, when a patient presented himself with a history of severe attacks of vertigo, would have to ascertain only if the vertigo were of aural origin; if so, in what part of the ear it was situated, and, finally, what was the nature of the pathological process. This is really the problem that is to be solved in every case, and it is often obscured by the physician feeling anxious to make out a picture which will correspond with so-called Ménière's disease. He should be satisfied with establishing the relationship of the symptoms to the eighth cranial nerve.

These remarks are a somewhat lengthened preliminary to the notice of a practical communication upon this subject, made by Dr. Lemarley, in the *Annales des Maladies de l'Oreille, du Larynx, du Nez, et du Pharynx*. The drugs which have been used in this disease vary, naturally, with the stage and form of the trouble, but the bromide of potassium, salicylate of sodium, the sulphate of quinine, iodide of potassium, and, finally, pilocarpine, have been most frequently recommended. It is with regard to the efficacy of the last-named remedy that Dr. Lemariey writes. He reports the case of a man of 35 who suffered most severely from attacks of the *symptôme de Ménière*. The attacks developed suddenly on the basis of a chronic middle-ear disease, involving both ears. For a week he was treated in various ways without success, the attacks coming on as usual, and the continual vertigo annoying him greatly. At the end of a week treatment with pilocarpine was begun. He used a solution of ten centigrams of nitrate of pilocarpine in ten grams of distilled water. Injections were given every day, the patient lying in bed during the time and until after the "sweat crisis," that is to say, for about two hours. The dose at first was four milligrams of the solution, and was increased by one milligram every two days. Besides the physiological action of pilocarpine upon the saliva, the sweating, and the urine, a progressive amelioration in the state of the patient took place. Fifteen days after the beginning of treatment he was able to go about the wards, and in about fifteen days more he left the hospital, practically cured.

AFFECTIONS OF THE SKIN, &c.

96.—BACTERIA IN DISEASES OF THE SKIN.

How far bacteria are concerned in the etiology of skin diseases, is a question which is at present occupying dermatologists, and is discussed by Dr. Frank Payne in a paper read at the Annual Meeting of the Dermatological Society of Great Britain on May 20 (*The Lancet*, July 4, 1896).

The connection of micrococci with suppuration in the skin, as elsewhere, has been sufficiently proved. The suppurative affections of the skin are principally impetigo, ecthyma (if this be really distinct, pustular acne, folliculitis sycosis, boils, carbuncles, &c., pustular or impeteginous eczema, pustular scabies, pustular phthiriasis. In all these diseases, such micro-organisms as the staphylococcus pyogenes aureus and albus, and the rarer species of staphylococcus citreus, are found in abundance; and that they are the true cause of the suppuration is hardly open to doubt. Other factors, such as the composition of tbe blood, its containing sugar or products of imperfect digestion, general cachexia, weakening of the power of resistance in the tissues, special susceptibility, &c., are but predisposing causes. These suppurative dermatoses are frequently associated with suppuration of other organs (conjunctivitis, otorrhœa, purulent rhinitis, ulcerative stomatitis, even purulent vaginitis, and suppurating wounds and scratches). The cutaneous suppuration may be derived from the other affections, or it may give rise to them. To this whole class of primary or secondary suppurations of the skin, Dr. Payne proposes the name staphylococcia purulenta cutanea (a term borrowed from Darier and Louis Wickham).

Streptococci are rare in cutaneous suppurations, having been observed only in a few cases of impetigo (not to speak of the streptococcus of erysipelas). The general property of the streptococci is to cause diffuse, spreading inflammations, while the staphylococcal suppurations of the skin are generally remarkably localised. It is known that these organisms are present in or on the skin of many healthy people, living a purely saprophytic life, without producing any pathogenic effect. They may be seen or raised by cultivation from such places as dirt under the nails, the moist parts between the toes, dandruff or scurf on the scalp, and numerous other parts. Doubtless in most cases the cocci which produce suppuration are present on or in the skin beforehand, although they may come from the clothes or other external objects. Every person who has pyogenic organisms on his skin or external orifices is a possible source of danger to others, though he himself may be

quite free from inflammation. It is doubtless very rare that the microbes which produce cutaneous suppuration come from the blood, being excreted by the sebaceous and sudoriparous glands.

Important nurseries for bacteria are the hairy scalp, the moist parts of the feet, the anal and perineal regions with the adjoining parts. In all these parts, saprophytic bacteria are found which may become pathogenic. The suppuration of comedones or common acne on the face is undoubtedly often due to the descent of pyogenic cocci from the scalp. The occurrence of boils on the nape of the neck may be attributed to these cocci being worked by the friction of the clothes into the cutaneous glands. The spread of seborrhœic eczema from the scalp is an unquestioned fact.

Impetigo contagiosa is a superficial suppuration caused by the implantation or inoculation of pus. It is more likely to rise from impetigo itself than from other suppurations, and more when the disease occurs in an epidemic form than from isolated cases. It is distinctly contagious, while acne, boils, whitlow and other forms of suppuration are only locally or partially contagious. This fact of greater contagiosity remains to be explained. A remarkable instance of a transformation of local into infectious suppuration is "football impetigo" which has been seen so often in public schools. Boys engaged in a tight "scrum" often get abrasions about the face and ears, and these becoming infected, suppuration is set up, which may be transferred to other boys, and thus an actual epidemic is produced. Specimens from an epidemic of this sort were examined microscopically by Dr. Galloway, and he found chiefly the staphylococcus aureus and albus, which many of the football players might have been carrying about on their skin long before they were attacked with impetigo. The inference would seem to be that the same cocci show a great variability in virulence or infectiveness. We have first, the condition of a simple saprophyte producing no pathogenic effect; next, local inoculability on the same person, and finally the condition of extreme virulence with development of contagiosity. Out of a simple saprophytic growth, at length a definite disease results, quite comparable to a specific infection.

With regard to the causation of eczema, there is still wide divergence among dermatologists, one party affirming eczema to be of parasitic origin, another denying that it is in any sense parasitic. Many eczemas, as Van Harlingen says, are due to thermal or chemical irritation, or to stagnation of the blood; bacteria may readily lodge on eczematous surfaces and thus give rise to the idea that they were the original cause. While *some* kinds of eczema are undoubtedly due to bacteria and

should be classed under the head of "dermatites parasitaria," Payne gives his adhesion to the theory that eczema in general is due to the saprophytic organisms "which take advantage of some disturbance of nutrition to cause inflammation, and thus develop infective properties." It cannot, however, be said that the specific bacteria of eczema have yet been found.—From an editorial in the *Boston Medical and Surgical Journal*, *July* 30, 1896.

97.—SOME OF THE USES OF RESORCIN IN DERMATOLOGY.

[The following is taken from an abstract appearing in the *New York Medical Journal*, June 27, 1896 :]

The June number of the *Therapeutic Gazette* contains an article on this subject by Dr. M. B. Hartzell, who remarks that, although resorcin has been employed more or less in the treatment of cutaneous diseases for the past fifteen or twenty years, it occupies but a secondary place in dermatological therapeutics. Dr. Hartzell has had a large experience with it in skin diseases, and feels convinced that it is deserving of more frequent employment. He thinks that it may be a very useful remedy in a number of troublesome affections. It possesses, he says, keratoplastic and decided sedative properties. In the milder forms of eczema it often proves extremely serviceable in allaying the pruritus and diminishing hyperæmia ; and in the oozing forms, when the inflammation is not too acute, it often exerts a favourable influence in diminishing the discharge and hastening the formation of cornified epithelium. In many cases of erythematous eczema the judicious use of this remedy alone will result in recovery. The best results are obtained, says Dr. Hartzell, when it is used in watery solutions, in the proportion of from 10 to 15 grains to an ounce of water, as it is rarely advisable to use stronger solutions ; ointments also are apt to be irritating, and are not so useful as lotions. The addition of half of 1 per cent. of sodium chloride seems to increase the sedative effect of aqueous solutions, possibly, he says, by favouring absorption of the drug by the skin.

In the treatment of erythematous eczema, says the author, the following lotion will be found useful :—Resorcin, from 10 to 15 grains ; glycerine, 10 minims ; liquor calcis, 1 fluid ounce. This should be lightly dabbed, not rubbed, upon the affected parts for five minutes at a time, three or four times a day. In this way it usually stops the itching and burning and lessens the inflammation. The small quantity of glycerine is necessary to prevent the unpleasant drying which is apt to follow the use

of all watery solutions. In moist oozing eczemas the addition of some insoluble powder—such as oxide of zinc, calamine, or subnitrate of bismuth—enhances its usefulness. In cases in which oozing is very abundant, subgallate of bismuth has seemed to be decidedly valuable when combined with the resorcin, as in the following:—℞ Resorcin, 10 to 15 grains; bismuth subgallate, 30 grains; glycerine, 10 minims; limewater, 1 fluid ounce. M. Under the use of this lotion the moisture becomes less, the itching and burning subside, and desquamation shortly sets in. When the skin becomes dry and scaling, a paste of resorcin, like the subjoined, may be substituted for the lotion:—℞ Resorcin, 15 grains; powdered starch, 2 drachms; powdered zinc oxide, 2 drachms; vaseline, ½ ounce. M. This may be applied twice or three times a day. Owing to the fact that this paste turns blue some little time after it is applied to the skin, it is not suitable for use upon uncovered parts.

Notwithstanding its stimulating properties when used in sufficient strength, Dr. Hartzell states that he has not found resorcin of much service in old, thickened, squamous eczemas.

He has elsewhere called attention to the remarkable sedative effects exhibited by this drug in the treatment of painful ulcers of the leg which so frequently complicate varicose veins and eczema of the lower extremities, and he knows of no other remedy which is so useful in relieving the pain of these lesions, which is often excruciating. Used in an ointment of the strength of from 5 to 20 grains to the ounce, applied two or three times a day, it rarely fails to afford decided relief. Although it gives most gratifying results in the relief of the pain, it is less useful in promoting healing, being distinctly less valuable than many other remedies.

Resorcin is also of some value in the treatment of psoriasis, but it must be employed much stronger than is permissible in any of the forms of eczema. An ointment containing from thirty to forty grains to the ounce may be usefully employed upon uncovered parts where tar or chrysarobin are objectionable on account of the staining which they cause. Where the inflammatory symptoms are at all acute, ointments like the above must be used with some degree of caution, however, since they are capable of producing an undesirable amount of reaction.

In seborrhœa, particularly of the scalp, resorcin is one of our most useful remedies; as it is odourless and practically colourless, it makes an agreeable application to the scalp—much more so than sulphur, which is so frequently prescribed. In the treatment of seborrhœa capitis, the following oil will be found to be an agreeable and efficient application:—℞ Resorcin, 20 grains; alcohol, 2 fl. drachms; yellow vaseline, 6 drachms. M.

A small quantity of this should be thoroughly rubbed into the scalp with the fingers or a small sponge every night at first, later every second night. It should not be prescribed, however, for those with very light hair, since it causes a slight but noticeable discolouration.

In acne an ointment of resorcin—twenty or thirty grains to the ounce—may be sometimes used with good effect, says Dr. Hartzell, but it is distinctly inferior to the preparations of sulphur; and it is not a trustworthy remedy, since it sometimes unexpectedly sets up quite a severe dermatitis when used upon the face.

In addition to its sedative and keratoplastic properties resorcin possesses considerable value as an antiparasitic. Ihle has found the following paste efficacious in the treatment of favus:—℞ Resorcin, 1 to 1½ drachms; lanolin, 2 drachms; vaseline, 2 drachms; powdered zinc oxide, 2 drachms; powdered starch, 2 drachms. M.

An ointment containing from thirty to forty grains to the ounce is serviceable in the treatment of the various forms of trichophytosis. Although it is not superior to other remedies of this class, says Dr. Hartzell, it has the advantage of being a cleanly application, far more so than sulphur and tar which are so commonly employed as antiparastics. In tinea versicolour an alcoholic solution, from twenty to thirty grains to the ounce, may be painted over the affected area with a large camel-haired brush nightly, until free desquamation takes place. If the disease is not completely cured when desquamation is completed, the application may be repeated a second or third time.

98.—THE PATHOLOGY OF ITCHING AND ITS TREATMENT BY LARGE DOSES OF CALCIUM CHLORIDE.

By Thomas D. Savill, M.D. Lond.,
Physician to the West End Hospital for Diseases of the Nervous System.

[The following is taken from Dr. Savill's paper:]

Illustrations of primary pruritus are found in the itching of jaundice, diabetes, in pruritus senilis, and in all skin conditions where itching is the primary, and often the sole, local feature of the case. The author also believed that the itching of lichen urticatus and prurigo come under this heading. It is characterised by a tendency to become general or diffuse, and by the eruption, if there be any, coming out either simultaneously, or subsequent to the pruritus—never before.

The author gives seven illustrative cases, and remarks in conclusion :—"As to the efficacy of calcium chloride in relieving the itching, the patients themselves, who are in these circumstances the best judges, have no doubt whatever, and are loud in their expressions of gratitude. The above cases are selected as illustrations because they are less complicated, and because the pruritus was in all of them a most pronounced symptom. In all of these cases the itching was relieved, and the eruption, if any existed, disappeared at the same time. I have not so far met with any absolute failures, though sometimes the dose has to be considerable and continued for several weeks, especially in long-standing cases. In Cases 3, 4, 6, and 7 a cessation of the remedy was attended by a return of the symptoms, which disappeared again on its resumption, all the surrounding conditions remaining the same all the while. This, which corresponds to Mill's double method of agreement and difference, is the best kind of evidence obtainable as to the efficacy of any drug. This was particularly noticeable in Case 6, where it occurred on two occasions.

"Four of these cases are of especial interest because other remedies had been previously tried, and had failed to give relief either for the eruption or for the itching. Thus, in Case 3—warm tar-baths, ointment, arsenic, and bromide of ammonium; in Case 4—tar-baths, and a mercury and tar ointment; in Case 6—sulphate of quinine in large doses; in Case 7—arsenic, sulphate of quinine, tar-baths, and lotion over a long period of time, had all been tried without producing any evident amelioration. In several of these cases, though I have no records showing which ones, a regulation of the dietary had also been adopted, but until the calcium chloride was administered no benefit had ensued. The opportunity of trying the remedy in children for the itching that accompanies urticaria has not presented itself, but there is every reason to believe it would be equally efficacious in them also.

"*Mode of Administration.*—The doses must be considerable, not less than 20 gr. three times a day, and should be gradually increased; 30 and even 40 gr. have often succeeded where less have failed; the *Pharmacopœia* dose is 15 to 20 gr. If administered after meals and in a wine-glass of water it is surprising how little these large doses upset the stomach, and I have never known it produce vomiting. Patients sometimes complain that it makes them thirsty, and to cover the salt taste it is best administered with 1 drachm of tincture of orange peel and 1 ounce of chloroform water, in which form it is really an agreeable medicine, and would be well taken by children. It is important that the diet at the same time should be regulated —no beer, sugar, or sweets being allowed, and meat only in

very moderate quantity. The recovery of Cases 3 and 6 was certainly retarded by neglecting this. It is also important to keep the bowels acting freely. This was evident in Case 1. Although improvement is generally noted after the first dose, complete recovery is sometimes not obtained until the blood becomes saturated with the remedy, and the dose must be increased until this is accomplished; in long-standing cases perseverance is necessary—for example, Case 6. Success may follow doubling the dose if 20 gr. do not succeed. The remedy seems to take longer to act in old people and inveterate cases—Case 7, for example, though Case 2 yielded more readily. When recovery is obtained the dose should be gradually, not suddenly, reduced; and it is very important that the remedy should be continued for at least one to three weeks after all symptoms have disappeared.

"It is not possible yet to indicate precisely which cases are most suitable for this treatment, but it is worth while trying in all cases where itching is a pronounced feature; and if this small contribution shall have been the means of affording relief in this troublesome condition my object will have been achieved. In most of the cases an actual cure has resulted; but in a few of very long duration, including Case 7 among the foregoing, relief was obtained only so long as the drug was being taken. Nevertheless, cure will probably result, with perseverance, even in these."—*British Medical Journal*, *September* 19, 1896.

99.—THE NATURE AND RELATIONS OF THE ERYTHEMA MULTIFORME GROUP.

(The following is a report of the discussion on this subject in the Third International Congress of Dermatology, 1896:]

Dr. Veiel (Cannstatt) opened the discussion. He stated first of all that in his opinion the disease described by Hebra as erythema exsudativum multiforme was a distinct infectious disease, with well-marked characteristics distinguishing it from somewhat similar erythematous eruptions accompanying other infectious diseases. One disease in especial from which it should be clearly differentiated was erythema nodosum. The members of the Congress were interested in noting that the speaker then proceeded to give his reasons for thinking that affections grouped under the category of erythema exsudativum multiforme were in no way connected etiologically with gout and rheumatism, thus clearly defining the position which is now occupied by many German observers. He considered on the other hand that this group of skin affections was not even dependent on angioneurotic influences, but was due to an

inflammatory process in the skin caused by some locally infective material.

Dr. Stephen Mackenzie continued the discussion, and it was important to observe that the position taken up by him was in many points in direct opposition to that defined by Dr. Veiel. Readers of this journal are aware of the pronounced opinions held by Dr. Mackenzie on the close relation between many of the forms of erythema multiforme and rheumatism. In reference to "purpura rheumatica," we believe that we are right in stating that this affection is considered by Dr. Mackenzie as being not only an evidence of the rheumatic diathesis, but as a direct result of the disease rheumatism, just as is the well-known arthritis.

This speaker first pointed out that till the actual causes producing the various erythemata are discovered, the clinical evidence is the most important in helping us to arrive at a correct conception of the etiology and true pathology of this group of diseases. He then submitted a table analysing 167 cases of erythema. The varieties of erythema classified were:—E. nodosum, E. marginatum, E. palpulatum, E. tuberculatum, E. multiforme, and E. fugax. Attention was drawn first to the fact, which becomes at once apparent on examining his table, that the great majority of the patients were females, in the proportion of four females to one male, and that the incidence of the disease was by far most frequent in the second and third decades of life.

In the cases of E. nodosum, it was shown that in 22 per cent. there was definite acute or sub-acute rheumatism; and including 108 cases previously published by the author, making in all 233 cases, 19 per cent. showed evidence of distinct articular rheumatism. Besides this undoubted proportion there were others which should be described as rheumatic subjects. Valvular heart disease was present in 9 cases of E. nodosum.

Of the cases of E. multiforme 19 of the 54 collected showed evidence of acute or sub-acute rheumatism.

Of the 5 cases of E. fugax, 3 occurred with definite articular rheumatism, while valvular disease was present in 4 cases, 1 of which was fatal.

It is definitely proved, therefore, that actual articular rheumatism was present in 26·9 per cent. of the whole number of cases; but as the criterion of rheumatism taken was actual arthritis, there were many other cases of erythema associated with the less distinct rheumatic lesions, so that probably the estimate that 50 per cent. of the cases of E. multiforme are associated with rheumatism is more accurate.

The question arises, then, how far is it justifiable to regard any individual case of E. multiforme as being of rheumatic

origin, in the absence of distinct evidence of arthritis? The speaker expressed his opinion "that the frequency of the association is so strong that an attack of E. multiforme, though unattended with articular rheumatism, justifies a suspicion that it is rheumatic." . . . It was also suggested that the age and sex incidence harmonised with the hypothesis that rheumatism was the principal etiological factor.

Dr. Mackenzie went on to remark on the very small amount of knowledge at present possessed as to the etiology of rheumatism, but that in rheumatism we were concerned with a toxin circulating in the blood was much strengthened by the study of the erythema group of skin affections.

Dr. Mackenzie's contribution to the discussion was a very important one from the clinical standpoint. In view, however, of the fact of the admitted possibility of other toxins producing eruptions with all the characteristics of the E. multiforme group, and even eruptions in no way to be distinguished from the purpura rheumatica itself, we should have been glad to have heard the subject discussed more freely from the other side. In Dr. Mackenzie's statistics it is obvious that we must first exclude the normal incidence of rheumatism in his collected cases, and consider as of weight in proving a rheumatic origin only the proportion in excess of the normal. From recent papers and observations, the importance of remembering the influence of noxious ingesta, or the absorption of the products of faulty digestion, must be borne in mind as a weighty factor in the causation of eruptions of the erythema multiforme and purpura groups, especially in the case of children; and no doubt there are still other causes to be discovered. If the cases of erythematous eruption or of purpura were studied from the point of view of ascertaining the probable cause, then the proportion left for rheumatism to account for would be more satisfactorily ascertained. According to Dr. Mackenzie's statistics, there are at any rate 50 per cent. of our cases which cannot be ascribed to rheumatism.—*British Journal of Dermatology, October*, 1896.

100.—TREATMENT OF RINGWORM OF THE SCALP IN INSTITUTIONS.

By CHARLES W. ALLEN, M.D., New York.

[The following is taken from Dr. Allen's paper:]

In the first place we have the protection of other inmates to claim our most careful consideration, and therefore facilities must be provided for immediate and perfect isolation. Secondly,

those who have almost recovered must be kept apart from the new cases, in which the disease is more acute, more active and more likely to be transmitted. It is not sufficient for prompt eradication of an epidemic of ringworm from an institution that the cases of the disease be kept by themselves. Some are more susceptible of rapid cure than others, but unless they are removed at a time when a cure seems to have been effected, they run the danger of becoming contaminated anew. Nor are we justified in returning these apparently cured cases to their former surroundings amid healthy children until they have undergone a period of probation in a non-infected place of isolation and observation.

The form of local treatment to be adopted varies somewhat according as the ringworm is disseminated or diffuse, *i.e.*, in one or more large patches, or perhaps occurring in numerous small spots. In any event the hair is cut short with barber's shears or the scalp is shaved. This is necessary for girls as well as boys in institution life, since it not only facilitates treatment but permits of the necessary observation and oversight. The scalp is then best washed with bichloride, and, if open wounds are absent, such a solution as the following can be employed:—Bichloride, 1; alcohol, 100; water, 500.

Most of the remedies recommended are parasiticides, and many contain mercury in one form or another. One which we have found to act well at the Randall's Island Infant Asylum has the following composition:—℞ Hydrarg. bichl., gr. x.; bals. Peru, ʒ iii.; oli. lavandulæ, ʒ i.; spt. vini rect. ad., ʒ i. This can naturally be applied to a patch of limited extent only.

Another, which is almost always of marked benefit for a time, is composed of:—℞ Sulphur, ʒ i.; hydrarg. ammon., ʒ iv.; bals. Peru, ʒ iii.; lanolin; vaselin, āā ʒ ii. Care must necessarily be exercised in any of these stronger mercurial preparations.

A non-mercurial solution which I introduced at this institution, and which had the effect of clearing the surface rapidly of evidences of the disease, was composed of:—Menthol, gr. 10; thymol, gr. 10; chloroform, ♏ xxx.; water, ʒ i. Another was ℞ Hydrarg. nitratis.; ichthyol, āā ʒ i.; collodion, ʒ i. Or, Thymol, 2; chloroform, 8; ol. oliv., 24; as proposed by Morris.

Another plan somewhat employed was to cover the scalp with a sufficiently large piece of spread mercurial plaster. After securing a certain amount of irritation by these means it is better to withhold entirely such strong remedies, and resort for a season to the blandest topics until the inflammation has subsided. Then the same, or, often better, another equally powerful parasiticide remedy is to be reapplied. After various attempts with various methods, naturally used in connection with strict cleanliness, the hair being made short by cutting

or shaving, shampooings, antiseptic washes, &c., I have come to the conclusion—which is one also reached by a number of observers—that chrysarobin is to-day the best drug at our command for securing an efficient and prompt effect. It has its disadvantages, which are well known. It is uncleanly both for the patient and for bed linen and clothing. It is liable to produce dermatitis and staining of the skin, and if care is not exercised it may affect the eyes disagreeably. Still it is the best drug we possess, and in employing it recently in about 90 cases I was enabled to obviate most of the disagreeable effects by exercising due care, first in its application, and secondly in preventing its being spread to other parts by the patients themselves through advertent rubbing and distributing it. There are various ways of minimising this disadvantage by caoutchouc and other caps or head dressings, and the suggestion has been made to fasten such a cap securely over the forehead by means of a rubber or adhesive bandage, and only raise the cap from behind to make application of subsequent dressings. Although my patients wore caps chiefly to protect the pillows, I incorporated the drug in collodion, proportion of one drachm to one or two ounces, and this was painted on over the shaven scalp wherever patches of disease were to be seen, and renewed as often as it became loosened or detached. Perhaps the action is somewhat slower than when ointment is applied, but I could never convince myself that the benefit of shutting off the air, partially at least, from the diseased areas by the collodion was not of decided benefit in itself, because of the well-known aerobic nature of the fungus.

Should these cases be epilated?

Yes, if it can be done with proper skill, care and intelligence, and especially if the cases are few and the patches small; but, to start in to epilate several hundred children in whom the disease has manifested itself and secured the upper hand so to speak, the persons charged with the epilation being the ordinary hospital or asylum attendants, is a task much worse than useless.—*Pediatrics, August* 15, 1896.

Obstetrics and Gynæcology.

101.—ANTISTREPTOCOCCUS SERUM IN PUERPERAL FEVER.

By R. G. McKerron, M.A., M.B.,
Obstetric Physician, General Dispensary, Aberdeen, &c.; and
H. L. Reddy, M.D., L.R.C.P.,
Professor of Obstetrics, Bishops College University;
Physician-Accoucheur to the Women's Hospital, Montreal, &c.

[The antistreptococcus serum has been more widely employed during the past few months in various streptococcus infections, and sometimes with obvious benefit. Further references to the subject will be found in other parts of this volume.]

Dr. McKerron relates the following cases with remarks :—

With the treatment of septic infection by antistreptococcus serum still on its trial, it is important that in all cases in which the serum has been tried, whether successfully or not, the results should be put on record, in order that its true position and value as a therapeutic agent may be early established. On that ground the three following cases are communicated :—

Case 1.—Mrs. F., aged 22, II-para; delivered on July 14, at 9 p.m. Labour of normal duration and progress till head reached inferior pelvic strait, when, as delay occurred, forceps applied, and delivery easily completed. As the perineum was inelastic and non-distensible from a severe laceration at previous confinement, a right lateral incision was made to prevent rupture into the rectum. Edges of incision brought together by a single catgut suture. The strictest antiseptic measures were enjoined on the students who attended the case with me. Great care was exercised in the after-treatment. Convalescence was very satisfactory till the beginning of the second week; then the thermometer recorded 100°. On examination perineal wound looked quite healthy; discharge free, but not offensive; uterus felt two inches above the pelvic brim; compression of the fundus caused discharge from the vulva of lochia and gas. Vaginal examination showed uterus soft and larger than normal, with patulous os. Uterine douches of sublimate 1 in 4,000 ordered twice daily, and patient put on quinine and brandy. An improvement followed in the condition of the uterus, which became smaller and firmer with os less patent; temperature, however, continued to rise, varying from 101° to 102°, pulse 110. About midnight on 26th patient had a rigour, temperature at once rising to 105°, pulse 140. Temperature gradually fell, till on evening of 28th it was 100·8°. At 10 p.m. on 29th temperature, which at 6 p.m. was 101°, was found to be 103°. At 2 a.m. a rigour without further elevation. At 10 a.m. next morning temperature 103°, pulse 112. 10 c.cm. of serum were injected into the arm with ordinary antiseptic precautions. At 2 p.m. temperature 102°, at 6 p.m. 101°; patient complained of hot burning feeling all over body, and of considerable local irritation at seat of injection. At 9.30 p.m. temperature 103°, when another injection of 10 c.cm. was

given. A slight fall followed injection, but at 6 a.m. temperature 103°. Patient slept well during the night—the first sleep for several nights—and in morning expressed herself as much better, but still complained of hot burning feeling. The temperature was still 103° at 10 a.m. (on 30th), when a third injection of 10 c.cm. was given. A considerable improvement in temperature and pulse followed. At 2 p.m. temperature 102°, pulse 104. At 6 p.m. 100·8° and 88, while at 10 p.m. 100° and 86. No further injections were given. At 2 a.m. another rigour with rise of temperature to 103°; under quinine and douching, which had all along been continued, temperature fell to 100° at 10 a.m., and to normal at 2 and 6 p.m. On the following morning (August 1) temperature was 100°. On that and next evening 99°. The chart shows the subsequent behaviour of the temperature till the 6th, when she was removed from my charge to the Royal Infirmary. Through the kindness of the physician in charge, I am able to state the subsequent history of this case. The temperature continued for five weeks above normal, with occasional exacerbations, sometimes preceded by a rigour. The woman lost flesh. No localised inflammation could at any time be detected. The serum was not again used.

Case 2.—Mrs. McK., aged 43, XII-para, confined on August 6. Labour, which was conducted by a midwife and students, was normal and of under four hours' duration. Two or three cases of scarlet fever had recently occurred in the house, but had been removed. On the second day after delivery she had a rigour, having previously complained of headache. In my absence she was seen on the 10th by Dr. Glennie, who found her temperature 102·5°, while her pulse was 130; the skin of the face was desquamating, but as no sore throat was complained of then, or at any time, the possibility of scarlatinal infection was excluded. Vaginal douching with 1 in 2,000 perchloride of mercury was ordered, and salicylate of soda with stimulants prescribed. The temperature, though improved, continued high. On the 12th, a bright rash—resembling a measles eruption, appeared, limited to the chest; during the night there had been a good deal of abdominal pain and diarrhœa. Quinine was ordered, and an intrauterine douche, twice daily. On the 14th, temperature at 11.20 a.m. was 102·5°, pulse 126; 10 c.cm. of serum were injected. At noon temperature 104°, pulse 118; patient feeling very sick and complaining of thirst. At 3 p.m. temperature 103·4°, pulse 118, having had a short sleep. At 6 p.m. temperature 105·2°, and at 7 p.m. 105·4°, pulse 108. At 8.30 p.m. I saw her with Dr. Glennie; temperature was then 104°, pulse 110, feeble and running; considerable abdominal distension, but no pain and little tenderness; lochia scanty, but not offensive. Another injection of 10 c.cm. was given. Next morning at 9.45 temperature 101·8°, pulse 108; patient expressed herself as easy and comfortable. A further injection of 10 c.cm. was given. At 3 p.m. temperature 102·8°, pulse 104, while at 6 p.m. temperature 104·2°, pulse 116. The chart shows on 16th a morning temperature of 102·6° and an evening of 104·2°. On 17th at 11.20 a.m. temperature had again risen to 105·4°. A fourth injection of 10 c.cm. was given; at noon temperature 104°, pulse 118. The temperature continued to rise and at 3.15 p.m. was 106·5°. At 6.45, 106°, while the pulse was 132. The patient gradually sank, expiring at 7.45 a.m. on the 18th. All through the patient took sufficient nourishment, and about 6 to 8 ounces of whisky per diem.

Case 3.—Mrs. C., aged 26, III-para, delivered on August 21, at 6.30 p.m. Labour began at 10 p.m. on the 20th; presentation breech. A midwife—the same that attended Case 2—and student were in charge. The midwife's clothes had been thoroughly disinfected at the City Hospital, while she was enjoined to be more than usually careful in disinfecting her hands, &c. Convalescence was satisfactory till the 24th, when severe headache was complained of, and the temperature was found to be 101°. On the following afternoon and in the evening—when I saw her for the first time—temperature was 103°. A vaginal douche of 1 in 1,000 perchloride of mercury was given, and ordered to be repeated twice daily. Next morning temperature was 99·5°, but rose again in the evening. Notwithstanding the douching it continued to rise, and on the following afternoon (27th) was 104°—in the evening 103·8°. Serum was not

obtainable till the morning of the 28th, when at 11 a.m.—temperature 101·5°, pulse 95—10 c.cm. were injected into the arm with the usual precautions. The vaginal douche was followed by an intrauterine douche of 1 in 4,000. At 2 p.m. temperature 103·2°, pulse 96, while at 4.30 p.m. temperature 102·5° At 7 p.m. a second injection of 10 c.cm. was given, the temperature being 101·6°. On 28th, at 10.15 a.m. temperature 100°, pulse 98; a third injection of 10 c.cm. was given. There was marked swelling, with pain and tenderness at the seat of previous injections, extending along the arm and forearm, which were covered by an extensive erythematous eruption. At 11.30 a.m. the temperature was 100·2°, while at 5 p.m., though it had risen to 101·2°, the pulse was 100. Douching, quinine, and stimulants were continued. On 30th, in morning temperature 98·4°, in the evening 99·4°, pulse 78. For the four following days the temperature was normal or subnormal. On the morning of the 4th pain was complained of in the right breast, which was tense and tender. The temperature in the morning was 100°; in the evening 101·4°. The threatened breast inflammation soon subsided, and the temperature in two days was normal.

Remarks.—Little is necessary by way of comment on the above cases. Their evidence on the whole is favourable, though the exact effect of the injections is difficult to estimate, as always in the case of a new remedy in a disease of uncertain and variable course. Two beneficial effects uniformly followed their use—a steadying of the pulse and an improvement in the subjective condition of the patient. The results would, I am convinced, have been more satisfactory had an earlier resort to the serum been possible. Whether a larger dose and greater frequency would have influenced the results must be left to increased experience to determine. In a case of puerperal fever where the serum was used, recorded in the *British Medical Journal* of June 20, a single injection was sufficient to reduce the temperature permanently to normal. The serum used in all three cases was from the Pasteur Institute.—*British Medical Journal*, *October* 10, 1896.

Dr. Reddy reports a case successfully treated, with the following commentary:—It will be noted that the reaction after the injection was marked by tingling and numbness of the extremities which continued forty-eight hours. Also that within thirty-six hours hæmaturia appeared as a direct result of the injection (and probably slightly affected the pulse, requiring stimulants to be given), and apparently as the effect of the poultices as rapidly disappeared. The severity of the action on the kidneys may have been due to one or both of the following causes:—The serum was obtained from a horse, was the strongest so far made by Marmorek, and the dose was large.

The protonuclein, although undoubtedly of service in many cases, as I have proved at least to my satisfaction, aiding in lowering the temperature, probably through phagocytosis or leucocytosis, I do not think could be credited with the complete removal of the membrane in less than twenty-four hours.

The first attempt to get cultures after antiseptics were used failed, showing that they had affected the surface to a great

extent, but had failed to reach the bacteria more deeply seated, and those who have had streptococcic infection know by experience that no antiseptics known to them can remove the membrane in less than twenty-four hours so that there shall be not the slightest return of it.

The douches as well as the protonuclein tablets were continued so as to aid in every way possible the recovery, and although for experimental work it might have been very interesting to have depended upon the serum alone, I felt that I should use every means to help the recovery of my patient.

There has as yet been comparatively little work done in obstetrical cases of this kind with serum, and with the literature on the subject you are all doubtless familiar. It seems so far to have proved of value in at least 50 per cent. of the cases in which it has been used. This, I think, is sufficiently encouraging for us to give it a fair trial, especially as it seems to produce but trifling ill effects, which rapidly disappear in the majority of cases. In a large number of such cases we find that the streptococcus, if not alone the cause, is at least one of the most dangerous causes of a condition which unfortunately is present in nearly every country and which proves so fatal. If we cannot always prevent infection we should endeavour to promptly arrest it, which I feel may now be done if the condition is recognised early enough and anti-streptococcic serum injected. I need hardly say in the majority of cases, in order to treat it scientifically, we should always have a bacteriological examination made.

Although one case would certainly not prove that we have at last found a certain remedy for so fatal a condition, still I believe that if sufficiently used there will be found to be such a measure of success that not to have given it a fair trial would lay one open to the charge either of ignorance or malpractice.—*Montreal Medical Journal*, *September*, 1896.

102.—PUERPERAL FEVER: ITS PROPHYLAXIS AND TREATMENT.

Read in the Section on Obstetrics and Diseases of Women, at the 47th Annual Meeting of the American Medical Association, at Atlanta, Ga., May 5–8, 1896.

By E. E. Montgomery, M.D., Philadelphia, Pa.

[The following is taken from Dr. Montgomery's paper :]

Careful investigation no longer leaves a doubt that the puerperal inflammation is induced by a streptococcus identical in its characteristics with the streptococcus of erysipelas and

the pyogenes. It cannot be denied that inflammation of a less intensity may develop from infection by the staphylococcus. Some cases of peritonitis and puerperal lymphangitis are undoubtedly produced by the bacilli of putrefaction. Rarely the bacillus coli communis may engender a suppurative peritonitis. The process of infection is greatly facilitated by obstetric traumatisms, the existence of previous attacks of gonorrhœa, and the presence of bacilli in the vagina.

The streptococcus conveyed to the patient by the finger of the physician, or nurse, or by instrumental manipulation during or following labour, makes its habitat in the *débris* of the mucous membrane, in the lymphatic fluid and blood clots at the situation of the placenta, in the material which forms the lochia, or vaginal discharge following parturition. The canals of mucous glands, tears of the cervix, vagina and vulva afford opportunity for further development; without producing marked effect upon the uterine or tubal surfaces, the infection may pass through these organs and produce violent and dangerous infective processes in the ovaries or peritoneal cavity. The infection proceeds by continuous extension through the Fallopian tubes to the peritoneal cavity, but in addition it extends through the lymphatics and blood vessels. The multiplication of germs results in the formation of ptomain or toxin products. The increase of the toxin results in irritation, swelling, congestion, and the exudation of liquid plasma into the cellular tissue. The presence and multiplication of the germs results in the destruction of the vitality of the infected tissue, the necrosis in mass of large layers of tissue, producing a superficial acute gangrene, or pseudo-diphtheria. The condition is always pus-producing and septic.

Clinically we find the disease varies in different patients. This is due to the varying immunity to the micro-organisms. The varying power of resistance in different individuals produces different types. These have been resolved into three:—First, inflammation and local suppuration; second, inflammation and migratory suppuration; and third, hypertoxic infection without suppuration. The point of infection varies in labour and abortion. In the latter, the placental site and erosions of the cervix will generally be the avenue through which the infection has found entrance, while in the former entrance may be provided by lesions of the vulva, as lacerations of the fourchette, lateral wall, or anterior commissure, an injury of the duct of Bartholin, adenitis, lacerations of the vagina, laceration or desquamation of the cervix by the fœtal head. The combat between the invading infection and the powers of resistance in the patient may result in the limitation of the disease to local inflammation or suppuration occurring in abscess in the labium,

cellular tissue of the pelvis, wall of the uterus, or in the Fallopian tube. Barriers of limitation are provided, immunity against farther invasion is early secured. Second, the inflammatory processes result in migration of the inflammation; sometimes exclusively by way of the mucous lining of the tube to the peritoneum, which is rare, or it extends from without inward, resting upon the external layer, or it may be mixed, involving the mucous membrane, the blood-vessels, and the lymphatics. Migration by the mucous membrane exclusively will produce a puerperal salpingitis, by the external part a phlebitis, while the mixed migration results in a multiplicity of lesions. In some cases the entrance of infection is so rapid, and the power of resistance so slight, that a toxæmia results, which produces a rapidly fatal termination, with slight or no indications of the formation of pus.

The fatal termination in puerperal infection may be occasioned by profound organic vices anterior to the confinement, which render the power of resistance faulty. Second, by a regular progression of the lesion and invasion of its economy by the poison, continually augmented in quantity and toxicity. Here there is a struggle, and the forces of nature are finally beaten down. Third, the virulent character of the toxic force results in a paralysis of the nerve forces. Here the multiplicity of the micro-organisms is at the maximum, with minimum resistance.

Treatment.—The first and most important consideration in treatment is prophylaxis. With a correct knowledge of the source of danger, we are the better prepared to meet or avoid it. As the contagion in the majority of cases is conveyed by contact, scrupulous aseptic or antiseptic precautions should be preserved. The nearer the measures of the careful surgeon can be imitated and practised, the less will be the danger to the patient. The physician in general practice who is in attendance upon sepsis or erysipelas can not be too rigid in his measures of preparation; indeed, it is a serious question whether he should go from a virulently infected patient, whether it be with sepsis or erysipelas, to the lying-in chamber. During the writer's term as resident physician in the Philadelphia Hospital in 1875, he went from the surgical ward, where he was in attendance upon cases of erysipelas, to the obstetric department; no special precaution outside of cleanliness of hands and person was practised. An epidemic of puerperal sepsis developed, in which twenty patients became seriously sick and four lost their lives.

The measures particularly to be practised are the removal of the coat, baring of arms to the elbows, careful washing of the hands with soap and hot water, with diligent use of the nail brush; hands should be immersed in 1 to 500 bichloride, and subsequently in alcohol. The bedding and personal clothing of

the patient should be clean, the vulva should be washed with soap and hot water, the bowel emptied by an enema, and an antiseptic douche given. Digital vaginal exploration should be infrequent, and only after careful disinfection of the hands. Instruments should be sterilised by boiling. Long-continued manipulation, instrumental delivery, or manual delivery of the placenta, should be followed by antiseptic intrauterine irrigation. The parts should be carefully cleansed subsequent to delivery, the placenta carefully observed to make sure no portion remains, and the uterus should be left firm and well contracted. Laceration of the vagina and vulva, unless the tissues are bruised or the vitality destroyed by long-continued instrumental delivery, should be at once sutured; excoriations may be cauterised by carbolic acid. The vulva should be covered with an antiseptic pad, which should be changed as frequently as it becomes soiled. With each changing the vulva should be cleansed with an antiseptic solution. Aside from the immediate post-partum irrigation mentioned, intrauterine or vaginal douching should not be practised.

Treatment of infection may be considered as, first, maintenance of the powers of resistance; second, production of immunity; and third, the resort to surgical procedures for relief of local manifestations. This classification of treatment has reference to septic conditions. Sapremia or putrid intoxication is relieved by removal of the decomposing placenta, portion of membrane or blood-clot, and subsequent irrigation and drainage. The diagnosis is determined by the character of the lochia and the digital exploration of the uterine cavity. Decreased or absent lochia, elevation of temperature, rapid pulse, depressed, anxious countenance, should betoken the suspicion of beginning sepsis. It may or may not be accompanied by local tenderness. Exploration of the uterine cavity reveals a smooth surface, which should confirm the diagnosis. The rapidity with which the vital forces are depressed contra-indicates the use of depleting agents, unless it be the moderate use of purgatives to aid in elimination. Early resort should be made to the use of tonics, stimulants, and easily assimilated and nourishing food. The most efficient stimulant will be found in strychnine, which should be given for effect, and may be administered hypodermically in doses of gr. 1·15 every two or three hours, where there is much depression. Opium, morphine, and antipyretics should be given with great circumspection. For the control of temperature, cold sponging or the cold pack should be practiced. Pain, whenever possible, should be relieved by the ice-bag. The natural tendency of disease germs is to develop toxins which are toxic to themselves, and render the individual immune to further ravages. The better the nutrition, the more the strength

is sustained, the earlier immunity will be secured. In many cases, however, the progress of infection is so rapid, the intoxication so profound, that the patient cannot survive until immunity has become established. As we cannot foretell in any individual the virulence of the infection, nor the possible powers of resistance, the use of an antitoxin should be considered as indicated wherever infection is recognised. This is best given by hypodermic injection. These injections of streptococcus antitoxin should be given in doses of 25 c.c. once daily for four days. They may be made into the cellular tissue of the abdominal wall, or into the buttocks or thighs. Of course, every precaution must be practised to render their use aseptic.

Bacteriologic study should be made of the secretions, but as the large majority of septic troubles arise from the presence of the streptococcus, valuable time may be saved by immediate use of the antitoxin.

Surgical Measures.—Curettement is advised early. If the condition is due to putrid intoxication this procedure, followed by irrigation and drainage, will give prompt relief. In streptococcus infection the germs are embedded in the mucous membrane, sinuses, and wall of the uterus, so that a curettement would not accomplish their complete removal, and affords more surface for ptomain absorption. Hysterectomy has been advocated, but it is a question whether in this form of infection the tissues have not been invaded to such a degree that the removal of the uterus would be ineffectual. The first aim should be the establishment of immunity, then local manifestations should be treated as they make their appearance with the assurance that farther spread will be avoided.—*Journal of the American Medical Association, August* 1, 1896.

103.—PULMONARY EMBOLISM.—RECOVERY.

By John H. Glenn, M.D.,
Ex-Assistant Physician, Rotunda Hospital, Dublin.

[The following is taken from Dr. Glenn's paper. The original was read before the Royal Academy of Medicine, Ireland.]

On the third day, after a natural and not prolonged labour, I found the patient's left internal saphenous vein thickened and inflamed, with a distinct area of redness about the size of a florin. The usual treatment was resorted to, namely, elevation of the limb, suitable posture, lotion of lead and opium, covering with cotton wool, and even bandaging.

The case for three weeks displayed some unusual features, as the temperature in the evening remained below 100° F., and

the leg displayed none of the usual hard œdema met with in the so-called "white leg." At this time I felt justified in regarding the case as one of simple venous thrombosis, my only anxiety being presence of obstinate constipation with white-furred tongue, the well-known recognised prodromata of phlegmasia alba dolens. With this in mind careful abdominal palpation was practised, but no effusion was to be detected on either side. During the fourth week the vein was to be felt as a distinct, hard cord, but the leg, though painful at night and feeling heavy to the patient, was still quite soft. It was slightly larger than the right on measurement.

Patient and her friends were warned as to the great dangers incurred by sudden movements, and she was progressing well, if slowly, up to the fortieth day after her delivery. On the next day she had some visitors, and, feeling so much better, probably rather over-exerted herself, for immediately after, when having her leg dressed, she suddenly became faint and breathless, and I was sent for in a hurry. My friend Dr. Flynn, who was kindly doing duty for me, saw her at 9.30 p.m., and found her lying with anxious aspect, rapid breathing, and tumultuously beating heart. Dr. Parsons, who also saw her, has very kindly furnished me with the following notes:—"I saw Mrs. J. about six o'clock; she was then rather pale and anxious looking. There was no distinct cyanosis or marked distension of the jugular veins, her temperature was slightly elevated, pulse about 110, respiration somewhat increased in frequency, but there was at the time of my visit certainly no dyspnœa. So far as an examination of the front and sides of the chest was concerned, I could detect nothing abnormal in her lungs. I did not care to move her, as I thought doing so might be attended with some danger. As regards her heart, there was no thrill or friction palpable, nor was there any marked displacement of the apex beat. A rather rough murmur, apparently systolic in time, was audible over the mitral area, but was heard with the greatest intensity in the third left intercostal space, about an inch from the left margin of the sternum, and could be traced downwards and inwards towards the end of the sternum. The murmur was loud, single, and had not any of the characteristics of a pericardial friction sound. I recommended digitalis and diffusible stimulants, so as to keep the blood flowing actively, and thereby diminish the tendency of a clot to increase in size."

I myself saw the case at eleven, and found her with a full pulse, beating at 140, temperature 101°, respirations 40. I made a careful examination of her chest, and found a well-marked systolic murmur, with its point of greatest intensity over the tricuspid area. The heart beats were regular, but afterwards became intermittent. She was slightly cyanosed when I saw

her, but not the livid purple considered as a proof of spontaneous coagulation rather than embolism. The air was entering the lungs, but not easily, as her attention was concentrated upon the act. She was in a most highly nervous state, and had quite made up her mind to die. There was no bronchitis nor pneumonia. I quite agreed with the diagnosis arrived at that it was a case of pulmonary embolism. I have twice before met with it after cœliotomies during my service in the Rotunda Hospital.

The treatment was spts. ammon. arom. and spts. ætheris co., with hypodermic injections of morphia to allay her restlessness, which was extreme. Digitalis was exhibited later, and the morphia was changed first to paraldehyde and then to sulphonal, which proved the most serviceable. The murmur persisted for four days, and gradually diminished, while the temperature rose until, on the 22nd, it was 103·4°. Now occurred the most interesting feature of the case. As the murmur passed away a localised area of pneumonic consolidation appeared at the back of the right lung, corresponding to the middle lobe, while at the same time she began to expectorate rusty-coloured sputum. I submit a chart of this local pneumonia, by which nature expelled this embolus; the amount in the twenty-four hours never exceeded half a spitting-cup. Care was taken to keep her off her back, and the case went on from this time favourably. It is interesting to note that the right leg became affected after this attack, but in merely a slight degree. Dr. Parsons saw her on February 20, 1896, and writes:—"Her heart seems perfectly normal, but there is still some dulness over the lower portion of the right lung at the back." This dulness has since cleared up, but I believe the pleura is still thickened.

I have brought the above case before the Obstetrical Section, not only on account of the interest which must necessarily attach to a recovery from pulmonary embolism, but also because I regard it as an example of thrombosis apart from sepsis.

It must, I think, be allowed to be one of two conditions—either spontaneous coagulation in the right heart, and extending into the pulmonary artery, or an embolus detached from a peripheral thrombus, probably floating out of the femoral vein into the vena cava. I have already mentioned why it is not likely to have been spontaneous coagulation. The great majority of emboli found after death come from the systemic veins, and notably from the internal saphenous and femoral veins. The reason of coagula forming most commonly in these situations being—first, that the action of the vis a tergo and thoracic aspiration is scarcely at all felt; and, second, the lying-in state is exceedingly favourable to this condition on account of the state of the blood, the dilated pelvic and femoral veins, and the

diminution of the heart's action; while if we consider these same causes as provocative of varices before delivery, we must add the general rise of abdominal pressure consequent upon the increased dimensions of the uterus. In this puerperal complication it is satisfactory to note that many more recoveries are reported than perhaps is generally recognised, and it is a great satisfaction to me to be able to add yet another.—*The Medical Press and Circular, May* 27, 1896.

104.—INDUCED PREMATURE LABOUR.

By J. G. SWAYNE, M.D. Lond.,
Emeritus Professor of Midwifery, University College, Bristol;
Consulting Physician-Accoucheur, Bristol General Hospital.

[At the end of his paper Dr. Swayne makes the following remarks:]

In the course of my widwifery practice I have had to induce premature labour in 24 cases on account of pelvic obstruction. I shall say no more about these now except to speak of the safety of induced labour under such circumstances, compared with that under such as I have already related. As regards the mother, there is no doubt that the operation is incomparably safer when undertaken on account of pelvic obstruction than when done to obviate the results of disease. In the first of these two classes—viz., the 24 cases operated upon on account of pelvic malformation—there was only one maternal death, and that arose from a very unusual cause; viz., ruptured uterus arising from an arm presentation, in which the child was spontaneously expelled in a doubled-up condition. In the second class—viz., the 13 cases I have already related—there were three maternal deaths. The first of these resulted from most obstinate vomiting just before full term, when, in hope that natural labour might occur daily, induction was probably delayed too long. In the second, the placenta was much diseased, and the mother suffering from jaundice and anasarca, as well as albuminuria. In the third, the intense vomiting which destroyed life evidently arose from hard drinking habits, to which the patient had given way not long before she became pregnant.

The causes why there should be such a great difference between these two classes as regards the safety of the mother are very obvious. As Spiegelberg remarks: "The operation is either a prophylactic measure, or else a rapid means of rescue from danger." It is prophylactic when there is mechanical

disproportion, and can be performed under the most favourable circumstances; the woman is in her usual health, the operation is deliberately performed and at a carefully chosen time. Hence in my own 24 cases there would have been no maternal death, if we exclude the one unusual case. If we admit it, however, the mortality would be no more than 4¼ per cent.; whereas in the second class of cases the operation, as Spiegelberg remarks, is a means of rapid rescue when the mother is suffering from dangerous disease, and it consequently has to be performed at the most critical moments when we cannot choose our own time, when she is, perhaps, *in extremis*, and under the most disadvantageous circumstances, both for her and the child. Hence, in my own list of 13 such cases there were three maternal deaths, or about 24 per cent. mortality. The causes I have just mentioned would also add to the comparative danger of the child, but not to so marked a degree. However, I cannot enter upon this at present.

Dr. Barnes has spoken very strongly of the danger of high vascular tension "with ultra-physiological changes in the qualities and quantities of the blood. . . This is demonstrated by quickened pulse and the indications given by the sphygmograph. This pressure is essentially eccentric or towards the periphery." And then he gave instances of external hemorrhages or effusions of serum thus produced, and adds the following excellent remarks as to treatment, which my own experience thoroughly endorses. He said:—"Venesection is sometimes strongly indicated as when hemorrhages occur, and when there is undue pressure on the kidneys, as in Mahomed's pre-albuminuric stage, or in the early stages of albuminuria with convulsion. Venesection is out of date, but I have practised it with the best results. Then in the last resource we follow Nature's most decisive action in her rebellion against pregnancy by inducing labour." With such testimony as this in its favour we may well ask, Why should venesection be "out of date?" I never could find any good reason why it should be, especially in cases of great arterial tension, and I can quote, on the contrary, a case which conclusively proves that any practitioner is guilty of neglect who in every case at once adopts "the last resource, viz., the induction of labour, without first trying so valuable a remedy as venesection. I can quote a case of this kind which occurred to my brother, Mr. S. Henry Swayne, and which was read by him at the meeting of the British Medical Association in Bristol in 1863. It was to this effect:—A woman in the seventh month of pregnancy was attacked with puerperal convulsions, for which blisters, cold to the head, purgatives and enemata were administered without effect. The urine, on being examined, contained so large

a quantity of albumen that the deposit formed by it occupied about ⅓ of the whole bulk of the fluid examined. She was bled on the next day to ℥xxv. No more convulsions occurred. Some urine, passed within twenty-four hours after the bleeding, was examined, and the albumen was found to occupy only ⅛ of the whole volume after subsidence. Although the fœtus appeared to be dead, no attempt was made to deliver, because there was no dilatation of the os uteri. The woman went on well for twelve days, when labour set in and terminated favourably, without convulsions, in the birth of a dead child, somewhat decomposed. My brother remarked:—"No other exciting cause for the convulsions in this case beyond the uræmia could be discovered; and that the presence of the fœtus in utero had little share in bringing them on or maintaining them, would seem to be shown by the cessation of the convulsions and of the albuminuria, notwithstanding the presence of a dead child in the uterus . . . for a fortnight after. . . . That the improvement was due to the measures employed, especially to the bleeding, can, I think, scarcely admit of a doubt." With this remark I entirely agree, for it was a most conclusive case. I cannot understand how such cases cannot be ignored by men who contend, as many do in the present day, that induced labour is the one thing needful in cases of persistent albuminuria, even to the extent of having recourse to the "accouchement forcé"—a mode of practice strongly reprobated by such high authorities as Charpentier and others of the French school. Professor Byers, of Belfast, has remarked very truly:—"As to the presence of albumen, this in itself should not in all cases be considered an indication for terminating pregnancy." The case I have just quoted fully confirms this opinion.—*Bristol Medico-Chirurgical Journal, June*, 1896.

105.—PODALIC VERSION WITH THE PATIENT IN THE PRONE POSTURE.

In the *Centralblatt für Gynäkologie* for June 6, Dr. Mensinga says that for the last eight years he has practised podalic version with the woman in the prone posture exclusively, and with constantly increasing satisfaction. He enumerates what he considers to be the advantages of this procedure. In the first place, the axis of the pelvic outlet is directed a little upward, so that there is more play for the hand and arm. Then the forearm may be kept in a state of pronation; this gives greater freedom of action to the muscles. The uterus is somewhat shortened, together with the vagina, and, what is of much greater importance, the latter is dilated so as to admit

the hand much more readily. At the same time the uterine orifice is dilated, and he has never yet met an example of the "contraction ring" while executing version by this method. The back of the operator's hand rests all the time against the firm vertebral column, so that the soft parts run no risk of injury. By reason of the shortening of the uterus, the fœtal legs come readily into the grasp. The repugnant requirement that the patient shall lie across the bed is done away with; she lies lengthwise with a pillow under her chest and with her face turned to one side, while the operator sits down.

By this method, two great dangers are avoided; they are rare, to be sure, but they do occur. The first is rupture at the utero-vaginal junction. With the patient lying on her back, the hand, in the endeavour to pass through a "contraction ring," tends to force the uterus upward more and more, stretching the vagina longitudinally so as to favour the occurrence of transverse rupture. The second danger averted is that of air embolism. With the woman in the supine posture, any air that may enter the vagina through the hollow of the hand tends to rise into the uterus; when the prone posture is made use of, on the other hand, the air escapes by the vulva at the first opportunity.

Dr. Mensinga lays great stress on the comparative painlessness of the procedure. He has never found it necessary to anæsthetise the patient, and does not always give her morphine; he prefers that there should be some pain to guide him in the manipulation. The most painful step ordinarily in podalic version is the passage of the hand through the vulva, and so it is in this form of version, but here everything facilitates the obstetrician's movements, and his sense of touch and his muscular sense are not so interfered with as in ordinary version, to the mother's indescribable gain. A further advantage lies in the extraordinary extent to which the state of the perinæum may be kept under observation; it is in sight all the time, so that both of the operator's hands may be occupied with the version, and yet he constantly knows whether or not a laceration is imminent.—*New York Medical Journal, June* 27, 1896.

106.—SYMPHYSIOTOMY.

By Edward A. Ayers, M.D., Professor of Obstetrics, New York Polyclinic.

[The following is taken from Dr. E. A. Ayers' paper:]

Scope of the Operation.—The scope of the operation must depend upon the skill required to perform it, the essential mortality that belongs to it, the mortality depending upon the

enforced, though undesirable, conditions under which it must be performed, and their comparison with those of its alternatives —version, induced labour, craniotomy, and Cæsarean section; and upon the after-disabilities to the mother and the mortality of infants delivered by it. It further depends upon the degrees of pelvic contractions, the dimensions of the fœtal heads, and the increase of pelvic space obtaining after pubic separation.

Comparative Mortality.—Internal podalic version in cases of contracted pelves will sometimes secure delivery of a living child, when, if it were not employed, an operation with the knife would be necessitated. The tendency of physicians not thoroughly trained in abdominal and pelvic mensuration is to exaggerate the difficulties at times, and leap to an operative delivery that is not necessary. In such cases version is conservative. But the most skilled examiner finds it much more difficult to foretell that version will deliver than that symphysiotomy will do so. It were far better not to undertake a version and fail to deliver, as it only adds to the difficulties by getting the child in the most awkward position for either craniotomy or symphysiotomy. In the last two years I have done two basiotrypsies, and, through my hospital staff, delivered a fœtal head that had been left in the uterus with the body torn away. All three were cases of impossible delivery by version. Basiotrypsy is an easy operation if one has a trephine, but this instrument is in very few offices. Maternal mortality through version, from exhaustion, rupture of the uterus, or infection, averages from ½ to 2 per cent. The mortality to the fœtus is from 10 to 25 per cent.

Induced Labour.—The mortality from induced labour is, for the mother, from 1 to 3 per cent. The mortality for the infant in the first six months is from 75 to 90 per cent. These figures for infant mortality in prematurity seem large, but the more I have investigated the subject the larger have the figures grown. We must bear in mind that not all this mortality belongs to prematurity. Walcott gives in a recent paper the infant mortality from all causes as 30 per cent. in Bavaria, 20·3 per cent. in Holland, 16·6 per cent. in France, 16·3 per cent. in Massachusetts, and 26 per cent. in Boston. The incubator and improved infant feeding have not yet brought premature infant raising to a satisfactory accomplishment. As an alternative to symphysiotomy induced labour loses probably one-half its utility through that percentage of cases not being recognised in time for its performance.

Craniotomy.—There is a very wide variation in the mortality of craniotomy. Done early and without damaging effort with the forceps, it is quite a safe operation, unless there is great contraction of the pelvis. Its total mortality is in the

neighbourhood of 15 per cent. Done early and with skill, its mortality is from 1 to 2 per cent. For the child, of course, it is 100 per cent.

Cæsarean Section.—The best per cent. obtained for Cæsarean section is 8. The average general mortality is between 25 and 30 per cent. For the Porro operation it is nearly 38 per cent. For the infants it is 22·4 per cent. There is little need of so great a mortality for infants, the per cent. being due to some extent to operations after the infant was dead. In others it has been due to the present method of first constricting the uterus before opening it and removing the child. The essential mortality for infants should not be more than in normal labour, if the operation is begun early. The mortality for the mothers will always be high, no matter how great future efforts will be to lessen its dangers. It will always be the operation last selected. I state with positive assurance that the newer operation, symphysiotomy, is sure to have first consideration from this time on.

Symphysiotomy.—The general mortality for symphysiotomy in this country, where all but three cases were done during the antiseptic period, is about 9 per cent. It is, however, no exaggeration to say that the essential mortality of symphysiotomy is not much over 1 per cent. I believe the operation is slightly more dangerous than induced labour. I should say it is 1 per cent. greater risk. On the other hand, the risk for the child by induced labour is fully 300 per cent. greater; that is to say, a mortality of from 75 to 80 per cent. as against 20 to 28 per cent. by symphysiotomy. As regards the rate of mortality, symphysiotomy takes precedence over Cæsarean section and craniotomy, and is practically on a par with induced labour, but with much superior results in infant life-saving.

Mensural Limitations.—In a separation of 2½ inches, which is, or should be, the limit of diastasis, a gain of ½ inch is secured in the diameter of the conjugata vera. The average biparietal diameter of infants at birth is 3¼ inches. That of the occipito-bregmatic diameter is the same, so that we have a circle of this size representing the smallest cylinder the fœtal head can offer for passage through the pelvis. There is a reduction of about ¼ inch in this cylinder by moulding. Three-quarters of an inch to 1 inch then is gained in space by moulding, pubic separation of 2½ inches, and forceps compression. On the single basis of inches we would say that symphysiotomy should not be undertaken with a conjugata vera of less than 3 inches. But the elements of variation here are numerous. The pubic bones have been separated by Caruso 3⅜ and 3½ inches without evil. The fœtal head may be so small that delivery could be

accomplished by operation in a conjugata vera of 2½ inches. Again, the biparietal diameter may be too great for delivery in an almost average conjugate diameter. My third case, of twin renown, had a conjugata vera of 4 inches, but with a narrowed internal transverse diameter, and both infants measured at birth 4½ inches in the biparietal diameters. Practically the most important and difficult factor in leading to a proper selection of cases is the individual doctor's skill in physical diagnosis. I beg leave to call your attention to a new obstetrical history chart which will shortly be published, the aim of which is the development of skill in diagnosis and prognosis in all matters pertaining to an approaching labour.

Methods of Operating.—Three ways of performing symphysiotomy are now recognised:—Morisani's, Pinard's, and the one which I recently brought forward at the Academy of Medicine in New York. Morisani's method of cutting down to the upper border of the pubis, then passing a curved Galbiati knife down behind the joint and cutting from the base up and out, is not popular in this country, as it should not be, being both anatomically and surgically objectionable. Pinard's operation, which consists of cutting down upon the face of the symphysis through the soft tissues and exposing the joint, is a great improvement over Morisani's. The chief objection to it lies in the cutting through the vessels of the clitoris, causing much hemorrhage, and in unnecessarily exposing the joint. I have operated five times in the last eighteen months by a new method which I described in a paper before the obstetrical section of the Academy of Medicine in January. This paper appeared in the May number of *The Polyclinic Medical and Surgical Review.* Following are the brief essential points in the operation:—(1) Secure full dilatation of the cervix, if possible without risk to the child, before cutting the symphysis. (2) Make the initial incision a little above the subpubic arch and under the elevated clitoris. (3) Have the urethra and bladder held to one side with a small male sound. (4) Introduce the left index finger within the vagina against the posterior ridge of the joint up to the top. (5) Pass a narrow tenotomy knife, with the point close to the joint, up to within ½ inch of the top, and under the overlying soft tissues, cutting the middle portion of the joint. (6) Substitute a probe-pointed bistoury and meet the left index finger with the probe over the top of the joint, and work the blade through the joint downward until separation is felt by the posterior finger. (7) Have an assistant press the mouth of the wound and the tissues lying over the joint with a small piece of gauze. (8) Deliver with the forceps, if possible, and refrain from suprapubic pressure, aiming to deliver the head through the cervix without drawing it down

below the symphysis. (9) Hold the bladder well to one side while pressing the pubic bones together. (10) Pass a small strip of gauze into the prepubic wound, and another against the cervix after irrigating, leaving both pieces exposed for easy removal, having refrained from stitching cervix or perineum. (11) Dress the vulva with gauze, and strap the joint with adhesive strips. (12) Remove all the gauze in thirty-six hours, and irrigate the vulva and vagina twice a day, keeping the vulva carefully dressed between times. (13) Attend to catheterisation in person.—*Medical Record, September* 12, 1896.

107.—ORGANIC HEART DISEASE DURING PREGNANCY AND LABOUR, WITH NOTES OF SEVEN CASES.

By Arnold W. W. Lea, M.D., B.S. Lond., F.R.C.S. Eng.,
Assistant to the Professor of Obstetrics, Owens College;
Assistant Physician to the Clinical Hospital for
Diseases of Women and Children.

[The details of the cases and some other portions of Dr. Lea's interesting paper have had to be omitted.]

The effects of pregnancy, labour, and the puerperium on the heart have been carefully studied by numerous observers, and the changes which take place in the healthy organ are now well known. A certain amount of hypertrophy with some dilatation of all the cavities of the heart occurs in every pregnancy as a result of the increased quantity of blood in the circulation. The pulse tension is also raised. There is, in addition, a tendency for fatty degeneration and failure of the cardiac muscle to arise during the later months, even in the absence of valvular disease. Several striking instances of this were recorded recently by Dr. Handfield Jones.

If pregnancy occur in a patient with organic valvular disease, dilatation of the cavities may become excessive. This is often complicated by fatty changes in the cardiac muscle, and in some cases a fresh attack of endocarditis is set up.

It is, however, a well-known fact that many women with valvular disease pass through pregnancy, labour, and the puerperium without showing any signs of cardiac insufficiency. The heart is undoubtedly subjected to increased strain during pregnancy, and the result depends on its ability to respond to the stimulus. Many cases are recorded in which women with valvular disease have enjoyed good health with perfect compensation during the intervals between their pregnancies,

but during the latter months of each have suffered severely from symptoms of cardiac insufficiency.

If compensation be complete before conception there is a great probability that there will be no serious heart symptoms during pregnancy, and that labour will be passed through naturally. On the other hand, if the heart be showing signs of failure before conception, the symptoms will most certainly be much aggravated during pregnancy, becoming gradually more severe until labour comes on. In these cases there is also a well-marked tendency to abortion during the early months, and after the sixth month premature labour is likely to occur.

The effects of labour on a failing heart are very serious. In spite of this, death during labour is very unusual, even when the dyspnœa is very great. The period at which there is the greatest risk to life is immediately after the termination of labour, and during the early days of the puerperium. In some cases the patient is seized with great dyspnœa directly after labour. The face is at first cyanosed, and then may become pallid. Death ensues almost at once, or within an hour. This seems certainly due to over-distension of the right side of the heart. In other cases the patient may go on well for a few days, and then signs of cardiac failure suddenly come on, and frequently cause a fatal termination. This is probably the result of the degenerative changes which have been shown to be frequently present in the cardiac muscle, and which appear to attain their maximum during the early days of the puerperium. Lastly, more especially in cases of chronic mitral disease with back-pressure symptoms, the patient has great dyspnœa with gradually increasing anasarca during the puerperium, and often dies three to six weeks after delivery, though many cases presenting these symptoms may recover for a time.

The form of valvular disease which is most serious for the pregnant woman is undoubtedly mitral stenosis. The patient not uncommonly dies immediately after labour from failure of right ventricle. Mitral regurgitation is also of grave import, especially if there are signs of failure of compensation. In these cases the danger exists mainly during the early weeks of the puerperium. Aortic insufficiency, if uncomplicated by mitral disease, is not so dangerous to life, and the symptoms are usually much relieved when the labour is over, due probably to the lowering of arterial tension.

The following cases which have come under my observation during the last two years illustrate many of the preceding remarks very well. The first three cases are instances of chronic valvular disease, in which the lesion appears to be quite compensated for. The remaining cases were of a more serious type, and three of them, unfortunately, had a fatal termination.

Treatment.—There are several important points to consider in the management of cases in which signs of cardiac insufficiency manifest themselves during pregnancy. It must be remembered that the heart will certainly not improve until after delivery, and that the risks during the puerperium are very great. There are few exact statistics as to the fatality of cardiac disease during labour and the puerperium, nor are they of very much value, since cases differ in gravity to such a great extent. Of Dr. Macdonald's cases 60 per cent. were fatal.

The patient during pregnancy should be treated on general principles. If signs of cardiac insufficiency appear before the third month abortion is certainly indicated. Symptoms, however, rarely become well marked until after the fifth month. At this time, if back pressure symptoms appear, digitalis or strophanthus is indicated. A careful watch must also be kept on the urine, since many cases are complicated by albuminuria and nephritis.

The induction of premature labour is not considered advisable by most authorities. Of 32 cases in which this was done 22 terminated fatally, all, with one exception, during the puerperium. Still the condition of each case was no doubt very grave before the operation was undertaken. No improvement can occur in these cases until after delivery, due partly to the increased work thrown on the heart, and also to degenerative changes going on in the cardiac muscle.

Nature also tends to get rid of the fœtus, since in severe cases premature labour very commonly comes on. Hence, it seems that in selected cases it would be advisable to induce labour by inserting a bougie, being careful to avoid rupturing the membranes. A large proportion of the children are stillborn.

During labour it is universally agreed that the second stage should be made as brief as possible, since the bearing-down efforts have such a very serious effect on the cardiac muscle.

The cervix may be artificially dilated by Barnes' bags, and the child delivered by forceps or version. Chloroform may usually be given safely, although ether is preferable. The extraction should be made slowly, and Phillips advises that during this time a sandbag, weighing about 12 lbs., should be laid over the abdomen, so as to check the rapid fall of the abdominal pressure when the uterus is emptied, this being specially likely to embarrass the right side of the heart.

During the third stage free hemorrhage is beneficial, as tending to relieve the right side of the heart (Berry Hart). In the fatal cases recorded here hemorrhage was slight in each instance, though from the general appearance of the patient a profuse loss would have been anticipated. It is certainly inadvisable to administer ergot in these cases.

For the heart failure immediately after delivery nitrite of amyl is strongly recommended in 5 minim doses (Fraser Wright). It completely failed, however, in the fatal case recorded here. If cyanosis is very marked after labour venesection might afford relief, but it has not usually been of much avail in these cases; still it seems the measure most likely to relieve the heart, and should certainly be tried. Cupping, dry or wet, over the lungs has also sometimes been of great service. During the puerperium there is very great danger for the first fortnight or three weeks, sudden cardiac failure being not at all uncommon. Absolute rest in bed should be insisted upon. Cardiac tonics, especially strychnine and digitalis should be administered.—*Medical Chronicle, October*, 1896.

108.—ICHTHYOL AS A THERAPEUTIC AGENT IN THE TREATMENT OF DISEASES OF THE UTERINE ANNEXA.

By Robert Bell, M.D., F.F.P. & S.G.,
Senior Physician to the Glasgow Hospital for Women.

Some four years ago I had the honour of reading a paper before the British Gynæcological Society upon the therapeutic effects of ichthyol in diseases of the uterine appendages. The results which I had obtained previous to that date had been so eminently satisfactory that I have been encouraged to employ the treatment on a very much larger scale than I had previously the opportunity of doing. Before that date it was my almost uniform advice, when patients suffering from diseases of the tubes or ovaries presented themselves, to advise the operation for their removal; this I did, under the impression that nothing short of operation could possibly remove the diseased condition. I may add that it was not because I had any fear of the result of operative treatment in these cases that has influenced me since that period in discarding it wherever I had the opportunity, as it has been my good fortune never to have had a fatal result after oöphorectomy. I remember quite well when I gave the results which followed the employment of ichthyol tampons in salpingitis, oöphoritis, hæmatoma, and pelvic cellulitis, that, on the discussion of my paper, several questions were asked with reference to the unfavourable effects that such a treatment produced on the neighbouring organs, especially the bladder. Now, I confess that ichthyol, in a very small percentage of cases, does produce unpleasant bladder symptoms, but these are *so infinitesimal*, and can be so easily modified, that I have no

hesitation in saying that they cannot be said to militate in the slightest degree against the incalculable beneficial effects which result from the employment of this agent, and perhaps the most complete evidence in support of this statement may be adduced from the fact that, although at the present day I am seeing probably three or four times as many cases of pelvic disease that I did at the time at which the paper referred to was written, my operations have fallen off in an inverse ratio. To me the effects of ichthyol in the treatment of these at one time intractable diseases are perfectly marvellous; were I to give instances of a very small percentage of the number of cases which I have seen beneficially affected and cured by the simple method of applying ichthyol tampons, I feel assured that operations of the serious nature necessary for the removal of diseased appendages would rapidly decrease to a considerable extent. When it is taken into account that a woman undergoing such an operation cannot possibly be considered completely convalescent under a period of two years, it cannot be gainsaid that this fact alone, discounting altogether the dangers that the operation necessarily involves, adds very much to the responsibility which the surgeon undertakes.

It is not my intention in this paper to quote from any of the many authorities on this important subject, but simply to give the results of my own experience, which I think, from the number of cases I have had the opportunity of treating, I am fairly entitled to do.

The result of careful observation has led me to the conclusion that it is very rarely indeed, if ever, the tubes or ovaries become diseased independent of some pre-existent disease or lesion which has occurred in the uterus or cervix; and as these arise from so many different causes, I think it imperative, in a paper bearing on this subject, to glance at all events at the ætiology of the various pelvic disorders which are daily coming under my observation, and in the treatment of which I find ichthyol so eminently useful, seeing the efficacy of the therapeutic (as it can easily be imagined) would be very much handicapped, if not altogether destroyed, were the primary diseases either in the first instance or simultaneously not attended to.

To prevent any misapprehension as to the particular diseases which are included in this group, I must guard the statement which I have just made by stating that I only refer to diseases which are septic or inflammatory in their nature. I make the reservation that cystic, malignant, fibroid, and tuberculous affections may be excluded from the category of those diseases of the ovaries which are dependent upon a primary uterine origin, and which are certainly beyond the range of ichthyol as a therapeutic agent. It is rarely, indeed, that we find salpingitis

and its sequelæ without a pre-existing endometritis, and this, again, is dependent upon so many pathogenic sources that it would be quite foreign to my subject to trace its ætiology throughout. One powerful factor, however, must not be overlooked, as it has an important bearing upon the causation of oöphoritis, as well as being an invariable precursor of endometritis. I refer to laceration of the cervix, when it will be invariably ascertained that, in the circumstances of an ovary being affected, it is upon the side on which the laceration exists. It therefore becomes a necessity that, simultaneously with the application of ichthyol, this lesion be attended to. If, however, the fissure of the cervix has been in existence for any considerable period, it may prove a difficult matter to deal with it before the diseased condition of the endometrium has been at least partially rectified, and the thickening of the cervix resulting from this has been reduced, so as to bring it into a favourable condition for trachelorrhaphy. So far as my experience teaches me, it is not necessary to repair the cervix to ensure recovery of the endometrium; but the chances are that the recovery will not be permanent if the lesion is permitted to continue, and certainly the ovary will not have nearly such a good chance if trachelorrhaphy is not resorted to.

Few, I venture to affirm, will differ from me in coming to the conclusion that salpingitis, with its consequent evils, almost invariably results from the inflammatory condition in endometritis spreading by continuity of tissue, and also that in many instances the ovaries become secondarily affected to the tubal disease. This, I pointed out in a previous paper, is probably communicated through the lymphatic system; it stands to reason, therefore, that in treating inflammatory conditions of the ovaries and tubes it is absolutely necessary to remove the primary morbid conditions, which have given rise to the secondary affections, in the manner I have indicated.

Two marked cases will suffice to indicate the line of treatment which I have found most beneficial, as both of these ladies came to me from England for treatment, and in both instances removal of the ovaries had been recommended by men whose reputation is of the highest order. Both patients were married and had borne children; the one had been an invalid for eight years, and the other for over six, and during these periods both had been sterile. One ovary in each case was considerably enlarged and exceedingly tender, while the other was diseased to a less marked degree. In both instances endometritis with considerable hyperplasia existed, and the general health was very much reduced, and great pain on locomotion was experienced by both. I commenced the treatment by curetting, employing my dredge curette, and afterwards applied iodised phenol once a week to

the whole of the endometrium, while a tampon saturated with ichthyol was introduced bi-weekly. This treatment was kept up for about three months in each case, a gradual improvement in health and relief of the local symptoms being the result. One of these patients (the younger of the two) became pregnant within a year afterwards, and was delivered of a healthy child at the full term. Both are at present in the enjoyment of good health. In these two particular instances there was no cervical lesion, but a history of subinvolution, which was evidently the *causus morbi*.

In another case, where gonorrhœal infection contracted shortly after marriage was the *origo malis*, sterility had existed for twelve years, and both tubes were diseased. Curetting and the bi-weekly application of iodised phenol, followed each time by the introduction of a glycerine and alum tampon, was sufficient to restore the integrity of the uterus and tubes after a prolonged course of treatment, but I am convinced that, had the therapeutic effects of ichthyol been understood at that time, the convalescence would not have been so protracted. As it was, however, when the morbid condition had disappeared a child-bearing epoch was established, and continued for some years.

I quote this case simply to show how important it is to take measures to remove the primary disease or lesion simultaneously with the treatment of the secondary, and this is most emphatically the case where laceration of the cervix co-exists. To my mind, therefore, if we make it our primary object to treat those affections of the uterus which are within our reach, and succeed in restoring the organ to its healthy condition, we have a most reliable and almost uniformly potent therapeutic agent in ichthyol where inflammatory conditions of the uterine appendages co-exist.—*Edinburgh Medical Journal*, *April*, 1896.

109.—THE DIAGNOSIS OF SMALL OVARIAN TUMOURS.

By F. H. Davenport, M.D.

[After some preliminary observations, Dr. Davenport gives short details of ten cases successfully operated upon. In conclusion he makes the following remarks :]

This is a small group of cases, but I have confined myself to the consideration of those where the tumour was so small as not to cause any appreciable enlargement of the abdomen, with the idea of seeing how soon they cause symptoms, what they are, and whether any conclusions as to the nature and seat of the tumour can be drawn from them. The statement is commonly made in text-books that very frequently ovarian

cysts develop without the patient's being aware of anything wrong until the abdomen begins to enlarge. I imagine that in these days, when patients consult a physician more readily, such will not be found to be the case. In studying these cases with reference to diagnosis, we find that their symptoms divide themselves, as indeed do those of pelvic disease generally, into three groups — pain, disturbance of function, and reflex manifestations.

Pain was complained of in all the cases but one; more often in back, five cases; lower abdomen, four; confined to left side, one. The backache was the most marked symptom in two cases where the tumour was situated in Douglas's fossa. The case where there was no pain was that of fibroma of the ovary. There were five cases where the tumour was on the left, in only two of which was the pain located on that side. Of three cases where both ovaries were involved, pain was located in both sides once. In two cases of tumour of the right ovary no complaint was made of pain on that side. The location of the pain, therefore, is not of much aid in determining the position of the tumour. In the ten cases adhesions were present in four, but these were not the ones where pain was a prominent symptom.

The second group of symptoms has reference to disturbance of functions, namely, menstruation. In only two cases was there no complaint made. By far the most common anomaly (seven out of the ten cases) was an increase in the amount of blood lost. In two cases there was marked menorrhagia so as to deplete and weaken the patient; in one it was moderate, but still excessive. Two showed both menorrhagia and metrorrhagia, in one case the flow having been constant for eighteen months. In one case there were slight intermenstrual flowing spells, and in one the catamenia occurred every three weeks instead of every four or five weeks as formerly. In one case there was a diminution in the amount of the flow. In two cases dysmenorrhœa was complained of.

These cases of excessive flowing were interesting for several reasons. In the worst cases the diagnosis of fibroid of the uterus was the probable one, and in four of them intra-uterine treatment was tried, three times curetting, and once electricity, but with either no benefit or very temporary improvement. That in itself was a suspicious circumstance, and might have suggested that the trouble was extra-uterine. The operation showed why the diagnosis was difficult to make. Three of the cases proved to be small ovarian cysts intimately adherent to the uterus and the pelvic walls, so that they formed one solid mass; the fourth was a fibroma, but of the ovary. This connection between adherent ovarian cysts and menorrhagia has been noticed by several observers.

Pozzi says:—"We have already mentioned the fact that menorrhagia often occurs in the case of cysts impacted in the immediate neighbourhood of the uterus."

Coe, speaking of small ovarian tumours, says:—"Menorrhagia is the rule, due to chronic congestion and resulting endometritis fungosa. There may be irregular discharges of blood."

Tait says:—"In some instances ovarian tumours give rise to uncontrollable menorrhagia, and I have pointed out that there seems to be a close association with small cystic ovaries and this serious symptom."

The only case where there was a diminution in the amount of the flow was that of the dermoid. There were very few reflex symptoms complained of. Two had nausea and vomiting and bloating, one shortness of breath, and two were very nervous. In five no complaint referable to remote organs was made. These symptoms would naturally come on as later manifestations of pelvic trouble, when the nervous system had become gradually affected by the long continuance and increased size of the tumours.

The number of observations on which this paper is based is manifestly too small to render certain any deductions which may be made from them, yet it may be of interest to formulate some conclusion, both as a stimulus to future and more extensive observations, and primarily as a basis for discussion.

The following propositions are therefore made:—(1) Small pelvic tumours are usually accompanied by well-marked symptoms. (2) Pain is usually present, but its seat does not have any constant relation to the kind of tumour or its location. (3) Menstrual disturbances are the rule, and by far the most frequent abnormality is menorrhagia or metrorrhagia or both. (4) There seems to be a direct casual connection between severe uterine hemorrhage and cystic ovaries which are closely adherent to the uterus. (5) Uterine hemorrhage associated with a pelvic tumour which is uninfluenced by intra-uterine treatment (curetting or electricity) is more likely to be due to an ovarian tumour than a fibroid. (6) Reflex symptoms are comparatively rare, and occur in the later stages of the disease.—*Boston Medical and Surgical Journal*, *October* 8, 1896.

110.—SURGICAL TREATMENT OF RETROVERSION OF THE UTERUS.

[The following is taken from an editorial in the *Medical News*, *September* 19, 1896:]

Nature's plan of sustaining the various organs of the body in their respective positions, is that of suspension by ligaments.

The uterus, being the lowest organ in the body, was supposed to rest on the floor of the pelvis, and, therefore, offered the only exception to the rule of suspension. The inadequacy, however, of all operative procedures for the restoration and building up of supports in the parts below, eventually opened the eyes of gynæcologists to the fact that the uterus had ample ligaments to sustain it in place. Malpositions have come to be recognised as the result of relaxation in the uterine ligaments. The corollary to this is :—In case of misplacement, restore your ligaments, and suspend the uterus. All the various procedures that have been suggested since that time, are but the application of this one predominating principle. Out of it came all the various operations for shortening the round ligaments, as well as the various methods of hysterorrhaphy. But modify these operations as you may, both of them have failed to quite reach the mark of an ideal operation, and involve many serious objections. Alexander's operation is only applicable to cases in which the uterus is movable. Hysterorrhaphy converts a retroverted organ with adhesions to an anteverted organ, but with adhesions. Gynæcologists, generally, now recognise anteversion as the normal position of the uterus. They also recognise the fact that if that position can be maintained, the force necessary to support the organ is reduced to a minimum. Through the facility gained in vaginal work by vaginal hysterectomy for cancer and fibroid tumours and the operations upon the appendages, came the suggestion of relieving retroversion by operative procedure through the same route. This was put into practical application by Mackenrodt and others, in the operation known as vaginal fixation. While this operation restored the uterus to its normal position, and relieved all symptoms, it was found by several German operators to bring more or less serious complication and disaster in those patients who became pregnant. The advantages to the patient of this procedure over Alexander's operation and abdominal fixation, were so apparent that those who had tried it were little inclined to surrender these advantages, without serious effort to so modify the operation that the unfortunate consequences might be averted. Mackenrodt's original operation, briefly stated, consisted in making an incision through the anterior wall of the vagina, and dissecting the bladder from its attachments to the uterus, anteverting the uterus, and stitching its anterior wall directly to the edges of the vaginal incision. This procedure carried the fundus too low in the pelvis, and held it so firmly that in those cases where pregnancy occurred the anterior wall was prevented from taking its due part in the normal expansion of the uterus, and the fundus from properly rising out of the pelvis. It quickly became apparent that this difficulty might

be overcome by allowing the uterus more freedom of motion. and various suggestions have been offered for accomplishing this object. The latest modification of the operation, and one which commends itself more fully than any other, has been suggested by Wertheim (*Centralblatt f. Gynäk.*, 1896, No. 10). His method consists in utilising the round ligaments for attachment to the vaginal wall. After incising the vagina and dissecting off the bladder the finger is slipped over the fundus, the round ligaments are hooked up at a reasonable distance from the horn of the uterus, and attached on either side to the borders of the vaginal incision. The immediate results of the operation are excellent, but as no case of pregnancy after the operation has been reported, the crucial test of its value has not yet been applied. It seems reasonable to expect, however, that with the freedom of movement thus allowed the uterus the unfortunate consequences attending Mackenrodt's operation will be absent. It is also still uncertain whether the position will be maintained after parturition. If this shall prove to be a permanent relief of the displacement, and free from the disasters of Mackenrodt's method, it will score a great advance over both the Alexander operation and abdominal fixation.

A more careful analysis of the supports of the uterus points to the utero-sacral ligaments as a simpler and, from an anatomical and dynamic standpoint, more perfect means of retaining the correct posture of the uterus. When a woman is in the erect posture the uterus lies normally upon its anterior face; and if the cervix can simply be held sufficiently high in the hollow of the sacrum, gravity will carry the fundus to the front. The tissues that accomplish this are the utero-sacral ligaments. In all cases of retroversion, these ligaments must relax sufficiently to allow the cervix to descend in the pelvis before retroversion can occur. If, then, these ligaments can be made sufficiently taut to maintain the cervix at its normal level, the uterus must perforce be held in a position of antiversion. When these ligaments have become elongated, the indication would seem to be to shorten them. This principle has been applied recently by Gottschalk (*Centralblatt f. Gynäk.*, 1896, No. 16) in two cases, with perfect result. Briefly stated, his technic consists in catching the utero-sacral ligaments, after opening Douglas pouch, near their attachment to the sacrum and stitching them to the posterior surface of the uterus, just above the vaginal attachment. The success of Gottschalk in two persistent cases of aggravated retroversion invites further trial of this procedure. The principle is undoubtedly correct. The method allows of thorough and careful treatment in the appendages, and therefore is the most perfect one yet suggested for dealing with retroversion.

111.—ABDOMINAL HYSTERECTOMY.

By Dr. CULLINGWORTH, Obstetric Physician to St. Thomas's Hospital, London.

[In the discussion on Mr. Harrison Cripps' paper, Dr. Cullingworth made, among other, the following remarks:]

Dr. Cullingworth said that the operation which formed the subject of Mr. Cripps' paper being one of which he had had some personal experience, he would venture to offer a few remarks. Mr. Cripps' paper reflected the change which was gradually being effected in the attitude of the profession towards operations for myoma of the uterus. There could be no doubt that these operations were becoming more frequent. This was partly to be accounted for by the diminution of the mortality from the operation, consequent upon antiseptic methods and an improved technique. The risk of the operation being lessened, it was justifiable to advise surgical interference in cases in which, had the risk been what it used to be, it would not have been justifiable. But the change was also in some measure due to an advance in our knowledge of the natural history of uterine myomata, and to the more general recognition of the fact that these tumours are often a source of much misery, and not unfrequently a serious menace to the patient's health and even to her life. In the light of the evidence that was gradually being accumulated as to the very considerable proportion of cases in which these tumours continued to grow after the menopause, we were no longer able, without much reservation, to offer such mild comfort to our patients as could be obtained from the prophecy that their troubles would cease at the menopause. The cases on record were now numerous in which, so far from the tumours ceasing to be a source of trouble and inconvenience at that epoch, dangerous complications, such as extensive œdema, malignant change, and even gangrene, have set in some years later, with consequences fatal to the patient. All these considerations had made it impossible for us to speak to our patients as lightly and hopefully as we formerly felt justified in doing, and had contributed to make us more ready to advise surgical interference than we used to be. We no longer felt it incumbent upon us to invariably wait until dangerous symptoms had actually supervened. Under certain circumstances, and when other means had been tried and had failed, we anticipated the advent of dangerous complications by advising timely operation, before the health had become so seriously undermined as to give surgical intervention but little chance of success.

He entirely agreed with Mr. Cripps in preferring the so-called intra-peritoneal method to the extra-peritoneal. Every one who had practised the extra-peritoneal method must have felt more or less dissatisfied with it. For his own part he had always regarded it as a clumsy and unsurgical proceeding, that was sure to be replaced sooner or later by some method that would permit closure of the abdominal wound. Until some method was discovered of securing the patient against the risks of hemorrhage from the stump, the extra-peritoneal was undoubtedly the only safe method to employ. But from the moment that it was suggested to tie the uterine arteries as a preliminary step of the operation, the abandonment of the extra-peritoneal method became merely a question of time. Already that method had been practically superseded. It was now only practised by operators who had become accustomed to it, and who very naturally and properly hesitated to relinquish a method that had given them good results. The rivalry at present was not between the extra-peritoneal and intra-peritoneal methods of dealing with the pedicle, but between the method of leaving the cervix and that of removing the entire uterus. In the most recent discussions a third rival had entered the field, namely, operation through the vagina with morcellement of the tumour when it was too large to be removed entire. He (Dr. Cullingworth) had performed the operation of abdominal hysterectomy in forty cases, in nine employing the extra-peritoneal method of dealing with the pedicle and in thirty-one the so-called intra-peritoneal method, the cervix being left in all the cases. Since he had first adopted the intra-peritoneal method, now two years and a half ago, he had not once returned to the older plan of treatment. When the cases did well, there was a very striking contrast between the comfort of the convalescence after the one method and the discomfort after the other. Of course the question of mortality was of more importance than the question of comfort; but if, as he firmly believed to be the case, the dangers attending the intra-peritoneal method were not greater than those attending the other method, the minor question of the patient's comfort during her convalescence was not one to be altogether overlooked. The typical convalescence of a hysterectomy patient, treated by the intra-peritoneal method, was as painless and uneventful as a normal puerperium.

In conclusion, he (Dr. Cullingworth) read a short extract from a paper in which he had given an account of all his cases of oöphorectomy for uterine myomata ("St. Thomas's Hospital Reports," vol. xxii.). The cases were twenty in number, and the conclusions at which he had arrived with regard to the operation were:—"(1) That it affords an almost certain means

of relieving all the more dangerous symptoms in cases in which active treatment is necessary, and in which removal of the tumour or tumours is either impracticable or likely to be attended with special difficulty or grave risk. (2) That it is unsuitable in cases where the tumours have attained a very large size, or have become œdematous, or have undergone cystic or other degenerative change. (3) That it is peculiarly applicable to those cases in which the tumours are for the most part intra-pelvic, and in which operative interference is required for the relief or prevention of dangerous pressure symptoms. (4) That its field of usefulness is likely to become curtailed in proportion as the technique of abdominal hysterectomy improves, and the mortality of the latter operation diminishes. (5) That although, in experienced hands, its mortality is not high, it should never be regarded or spoken of as a slight or minor operation. (6) That it is impossible to know beforehand whether it will be an easy or a difficult, or even a practicable operation. (7) That the relief is not generally so prompt or convalescence so free from interruption as in an ordinary case of ovariotomy, or even of abdominal hysterectomy. (8) That before being submitted to the operation a patient should, in the interests both of herself and the operator, be made fully aware of the uncertainties that specially attend it."—*Transactions of the London Obstetrical Society, Part* ii., 1896.

112.—A *RESUMÉ* OF TEN MONTHS OF VAGINAL WORK.

By EDWIN B. CRAGIN, M.D., of New York.

[The following is extracted from Dr. Cragin's paper :]

The object of this paper is to review carefully the writer's vaginal work of the past ten months, and ascertain whether the anticipated advantages have been borne out in practice. Whenever it has been possible to leave in the pelvis a comparatively healthy tube and ovary, or an ovary and a healthy portion of a tube, or even a healthy portion of an ovary, this procedure has been adopted, so that in a large proportion of the cases the uterus and one appendage, wholly or in part, have been left. During this period, from March 1, 1895, to January 1, 1896, my vaginal and abdominal sections have been equal in number viz., 55 vaginal and 55 abdominal. In the 55 vaginal sections both appendages were removed in only 13 cases, and in 3 of these cases, in spite of the fact that both appendages were diseased and were removed, the uterus appeared to be so healthy that, after curettage and drainage, it was left in the pelvis. In

cases where both appendages were removed, and the uterus showed marked endometritis, or the salpingitis involved the interstitial portion of the tube, the uterus was removed also. This was done in 10 of the 55 cases. In reviewing his work, the conscientious surgeon is led to ask himself whether he would do the same were he to operate on the case again; in other words, has he any regrets? Of these 55 cases, which include all the vaginal sections, for all indications, done by the writer during the ten months above mentioned, four have died. One was for carcinoma uteri, in which the disease had extended beyond the uterus—a case in which the radical operation should not have been attempted. The second was one of puerperal septicæmia, in which the uterus was removed, in the vain hope of getting beyond the septic process. The third was that of a large pelvic abscess in a patient very weak and septic, in whom one pocket of pus was opened and drained through the vagina, July 19. The fourth death can be justly assigned to the vaginal section, and seems to me the only one of the four which comes in competition with the abdominal operation. Mrs. L., suffering with double pyosalpinx, was operated on by me April 23, 1895. Both pus-tubes were removed, also the right ovary. The left ovary seemed healthy, and was not removed; neither was the uterus. The patient died of sepsis, April 29. In the judgment of the writer the same operation, if performed from above, would have brought the same result. Had the uterus been removed *per vaginam* at the same time with the tubes, the result would probably have been different.

Something should be said regarding the complications of vaginal section. Rectal fistulæ are rather more common after the vaginal operation than after the abdominal. One reason for this is, perhaps, the fact that our touch has not been as well educated in the feel of the pelvic organs from below as from above.

The technic of opening the peritoneum, without injuring the intestine, has not been as long practised or as well perfected below as above. Experience and practice will improve this. The spontaneous results, however, of fæcal fistulæ occurring in the vaginal operation are much superior to those in the abdominal. It has been my misfortune to have had five fæcal fistulas. In three, however, there was a previous communication of an abscess with the rectum. The only one which did not close spontaneously had an abscess previously communicating with the rectum, and in whom the operation was begun *per vaginam* and finished from above; the uterus not being removed. This fistula had to be closed by operation three months later. In the other 4 cases the fistulas closed spontaneously—the first in sixteen days, the second in seven,

the third in fifteen, the fourth in twenty-four; an average of fifteen and a half days. Rectal fistulas seem to close more readily when the uterus is removed than when it is left; also in those cases where the opening in the rectum is farther from the vagina, so that a longer granulating and contracting canal results, close, in the experience of the writer, more readily than those nearer the vagina.

One of the early objections raised to the vaginal method, is that the vagina does not furnish sufficient room for the work. Of course, additional room may easily be obtained by incising the perineum on either side, but that one soon becomes accustomed to the space furnished by the retracted vagina, is shown by the fact, that in only 3 of the 55 cases, was it found necessary to enlarge the space by incision.

The popular method at the present time for controlling hemorrhage and the pedicles, seems to be by the use of clamps, left on about forty-eight hours. Save in exceptional cases this does not appeal to me as the best method. Certainly, the patient is more comfortable when ligatures are used instead of clamps, and the sloughing is less. My own rule is to make use of clamps temporarily if at any stage in the operation they seem more convenient, but to use ligatures chiefly, and with certain rare exceptions, where the uterus is large and fixed, and the broad ligaments are markedly infiltrated, replace the clamps by ligatures before removing the patient from the table. If clamps are necessary, use as few as possible. In only 4 of the 55 cases have I left on clamps. Catgut has been my only ligature material. The cases which seem to me best fitted for the use of clamps are the puerperal cases.

The only vesical fistula which has occurred in the above series was in Case 25, where, in an extensive epithelioma of the cervix, involving in one place the vesico-vaginal septum, a portion of the bladder was intentionally removed in order to get beyond the disease. This fistula was closed by operation some months later. Of these 110 cases operated on by me during the last ten months of 1895, nearly all the pus cases were done *per vaginam*; in fact only 4 were operated on through the abdomen.

It has been argued by the opponents of vaginal work that it requires a much longer time than the abdominal operation. These 24 cases taken for comparison were operated upon at the Roosevelt Hospital, where the time of each operation is noted. The average time in the 12 abdominal cases was forty-six minutes and five seconds. The average time in the 12 vaginal cases was forty minutes and twenty-five seconds; a gain over the abdominal route of five minutes and forty seconds.

Let us now consider the four supposed advantages of the vaginal route:—(1) *Sepsis.*—Pus-sacs which have ruptured in

removal have certainly discharged their leakage downward, and with less soiling of the intestines than would have been possible in the abdominal operation. Moreover, as we show from the temperature, pulse, and progress of the case after operation, there has been less sepsis. (2) *Hernia.*—During the month of January, 1896, a large proportion of the 55 vaginal cases have been examined, and in none of them did I find a hernia, although they were examined with that in view. (3) *Intestinal adhesions.*—The two symptoms which would seem to indicate intestinal adhesions are abdominal pain and difficulty in moving the bowels. In my experience both of these have been less in the vaginal than in the abdominal operation. (4) *Shock.*—Perhaps the best way to reach a conclusion regarding the relative shock in the two methods of operation, is to compare the highest pulse-rate in the first twenty-four hours in the two series of 12 similar cases. In the vaginal cases, the average highest pulse in the first twenty-four hours was $102\frac{3}{4}$; in the abdominal cases, 110. A difference of $7\frac{1}{4}$ in favour of the vaginal route.

Let me say, in conclusion, that in my vaginal work, I have found hemorrhage under control, and obstacles easily surmountable.—*Medical News, June*, 1896.

113.—PERIPHERAL NEURITIS IN PREGNANCY.

By George Elder, M.B., M.R.C.P.Edin.

The cases of peripheral neuritis recorded bearing a direct relationship to the pregnant state are at present sufficiently rare to be of interest even when they are comparatively mild. [The details of the two cases are omitted here. The chief manifestations of the neuritis were paræsthesial and other disturbances of sensation with some degree of weakness in the hands.]

There can be little doubt that these were cases of peripheral neuritis, though very mild in type. So far as one could ascertain (and in the second case her history for some years was known) no other cause for the condition beyond the pregnant state could be found. The patients were not alcoholic, there was no trace of syphilis, or of poisoning by lead, arsenic, or other mineral poison. There was no diphtheria and there was no trace of albumin or sugar in the urine. Influenza, gout, typhoid fever, pneumonia, &c., could all be excluded, and therefore one has to conclude that the peripheral neuritis was the result of the gravid state, a conclusion corroborated by the fact that recovery began as soon as delivery had taken place.

The recorded cases of peripheral neuritis closely associated with pregnancy have mostly been described as a variety of the peripheral neuritis of the puerperium, many of which, though only noticed during the puerperium, are thought by Eulenburg and other writers on the subject to originate during pregnancy. The polyneuritis of the puerperium is now generally divided into two classes:—(1) The generalised or diffuse form, affecting both the upper and the lower extremities. Here the affection usually resembles in onset and in character a case of ordinary alcoholic polyneuritis. It may, however, begin in the lower extremities and rapidly affect the upper extremities and the trunk, and so closely resemble Landry's paralysis, or it may begin by affection of the muscles of the palate and eyeball and spread to the limbs, so resembling a severe case of diphtheritic paralysis. (2) The localised form. Of this there may be said to be two types:—(*a*) affecting the superior extremity, and (*b*) affecting the inferior extremity. (*a*) The "superior" type is specially interesting because it was the type in most of the cases first described by Möbius and has frequently been observed since. Möbius was inclined to think that it was of special diagnostic value, for he thought that just as certain nerves are evidently specially susceptible to the poison of diphtheria—viz., those of the palate and eye—and certain others to the poisoning by lead—viz., those supplying the extensors of the wrist—so the nerves which are specially susceptible to the poison produced during the puerperium were the ulnar and median nerves. Although in some cases recorded since then the median and ulnar nerves were not at all affected, still it is a remarkable fact that in a comparatively large proportion of cases of puerperal polyneuritis these nerves were chiefly or alone involved. (*b*) The "inferior" type. Here the antero-lateral aspects of the legs are involved, leading to sensory phenomena in that region together with a greater or less degree of drop-foot. All cases, however, with such affection of antero-lateral aspect of the leg coming on after delivery are not cases of peripheral neuritis, but may be the result of:—(1) Traumatism from pressure of the head or forceps on the nerves inside the pelvis during labour, especially in narrow pelves. Here the paralysis and affection of sensation in the leg comes on immediately after labour and is usually unilateral. (2) Infiltration at the side of the uterus leading to pressure on parts of the nervous plexuses in the cavity of the pelvis Here, also, the antero-lateral type of paralysis is the form observed. No such variety of type has been described in the polyneuritis of pregnancy as has just been described in the polyneuritis of the puerperium, and the symptoms correspond to those seen in ordinary alcoholic peripheral neuritis, and so

need not be discussed further than by saying that usually the affection begins with paræsthesiæ more or less severe in the extremities; then paresis appears (specially affecting the extensors of the wrist and the flexors of the foot) and spreads to a greater or less extent, the electrical reactions corresponding to the rapidity of onset of the disease. There are also objective affections of sensation and perhaps trophic lesions. In the cases I have just recorded there were marked paræsthesiæ with objective affections of sensation, but the paresis was extremely slight if present at all.

Etiology.—The ordinary causes of neuritis must be eliminated —*e.g.*, alcohol, diphtheria, syphilis, lead, arsenic, &c., typhoid fever, pneumonia, influenza, and so on. If we accept, then, that there are cases of peripheral neuritis due to the gravid state, how are we to explain the onset of the disease? Here, again, it might be well to look for a moment at the disease occurring during the puerperium. In most of the cases of puerperal polyneuritis there was a distinct history of fever during the puerperium, so that there is much reason to believe that they were really cases of septicæmic neuritis. Some cases, however, have been described where the puerperium was said to be fever-free, although apparently in few of them was this point specially observed, as the cases only came under the notice of the observers some time after the onset of the disease. In such cases, even should it be proved more satisfactorily than at present that the puerperium was fever-free, there is in the process of involution of the uterus, &c., and consequent presence in the blood of a quantity of products of disintegration, a possible cause of poisoning of the nervous system. Similarly in pregnancy one has in the greater amount of relative changes going on, as a consequence of the growth of the embryo in *utero*, a larger quantity of effete products to be eliminated from the system, and it is probable that this is largely the cause of the neuritis when it is present; for the excretory organs may at-times be unable to fully eliminate from the circulation all these products, although they do not give any actual signs of being themselves diseased. That it is a toxæmic polyneuritis there can be little doubt, but as to the nature of the poison there is no evidence whatever. Why it should come only in a few cases it is difficult to see, but in other forms of peripheral neuritis there is a similar difficulty, for one person may consume for a similar or longer period of time vastly greater quantities of alcohol than another and yet not acquire alcoholic neuritis though the other does. It is a remarkable fact that in the cases of neuritis of pregnancy recorded, and, indeed, in those of puerperal polyneuritis as well, there are extremely few occurring in primiparæ. Considering that almost certainly the disease is

toxæmic in nature this is worth attention, for *a priori* one would have expected a relatively larger proportion of cases to have occurred in primiparæ, when the strain of pregnancy is for the first time thrown on the organs of the body. As regards the frequency of occurrence of neuritis of pregnancy I have only been able to collect eight cases (including those of Lever and Jolly, about which there is some doubt). This, however, is, I am convinced, no guide to the frequency of its occurrence, for in its milder form at least it must, I think, be fairly common.

Prognosis.—There are at least two fatal cases amongst those reported of peripheral neuritis in pregnancy. In the latter case the fatal issue was evidently the result of cystitis and pyelitis, but what the relation of these was to the neuritis, if any, it is difficult to say. In the other cases the recovery was in some very tardy, and in others fairly rapid. In my own cases, much milder than any others recorded, recovery began immediately after delivery; in one case it was complete in several weeks, and in the other in three to four months.

Treatment.—Remembering the fact that the disease may prove fatal one must be prepared to induce labour before the disease has advanced too far, for as soon as the uterus is emptied there is naturally a tendency to recovery. One would require, however, to be particularly careful in inducing labour to prevent the onset of the slightest degree of septic trouble, which would tend to aggravate the condition, for, as we have seen, nearly all the cases of peripheral neuritis have followed on a fevered puerperium. Otherwise the treatment of the condition would resemble that in other forms of peripheral neuritis.—*The Lancet, July* 25, 1896.

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THE bicycle is said to check tuberculosis, in Massachusetts. Dr. ABBOTT thinks the cause is the increase in open-air exercise. The reduction is most apparent in women.

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A New Sign in the Diagnosis of Measles.—HENRY KOPLIK calls attention to a sign of measles almost entirely ignored heretofore. It is found in the mouth and precedes the skin eruption. The appearance in the mouth, to which he refers, is an eruption on the mucous membrane lining the lips and cheeks, consisting of small irregular spots of bright red color. In the center of each spot is a minute bluish white speck. These red spots Koplik claims, with accompanying specks of bluish white color, are absolutely pathognomonic of beginning measles, and when seen can be relied upon as the forerunner of the skin eruption. Sometimes there are only a few of these red spots with central bluish point, but in marked cases they may cover the whole inside of the buccal mucous membrane.—*Archives of Pediatrics*, December, 1896.

The Untoward Effect of Substitutes.—A. M. COLLINS, A. M., M. D., of Shelbyville, Ill., writes under date of November 2, 1896:

"I never realised the vast difference between genuine antikamnia and the various substitutes that are being palmed off, until within the past few days; and the realisation was all the more pronounced because I myself was the patient.

"For four weeks I had been suffering with neuralgia of a very severe type and attended with considerable febrile movement. I tried the various compounds and other preparations, lauded as 'just as good,' but with no real advantage and with no little heart disturbance.

"On Saturday I went to Arcola, and while there was taken very sick with one of my neuralgic attacks. I sent to the drug store for some genuine antikamnia and, to be certain about it, procured an unbroken original package. I took it in eight to ten grain doses at intervals of two hours. The effect was magical, the first dose relieved the severity the pain, while the second quieted it entirely, and I went to bed, ping all night with one awakening of a few moments only, a thing I not done in four weeks. This experience, on my own person, has roughly convinced me of the superiority of the genuine antikamnia."

The Use of Protonuclein in the Treatment of Ulcers.—It is a well-known fact that of the regular clientèle of a surgical dispensary, patients suffering from some form of chronic ulceration constitute the greatest number. Considering that treatment in such cases must extend over a more or less prolonged period in order to be successful, and that most of these patients possess migratory tendencies, which are carefully nursed by friends who are constantly recommending different doctors and dispensaries, it is not to be wondered at that in a great many instances the final outcome of a certain line of treatment cannot be fully observed. In my dispensary work it has been, therefore, a somewhat difficult task to test the various local applications in the treatment of chronic ulcers, and then to come to some definite conclusion as to their respective merits, for while a number of cases improved and others got well under each line of treatment, a great many remained uncured or the patient disappeared from sight before much had been done. The various methods of local treatment comprised the use of ichthyol 10 per cent., ung. diachylon, lead paint, acetanilid and bismuth, and strapping with diachylon plaster.

The best results were achieved by the application of the latter, but there were a number of cases where this failed. In some of the patients the local treatment was supported by internal administration of remedies appropriate to the demands of the condition present.

We had just about concluded to award the prize of superiority to the use of the diachylon plaster, when a pamphlet describing the nature of Protonuclein reached our hands. The preparation of the drug is based upon the fact that all living beings possess some property which enables them to resist poisonous influences. Toxic germs in food, water or the air may be taken into the system or by direct local contact. The poison-resisting property is therefore existent in the blood. It is now well established the element of the blood which possesses this property is the white blood corpuscle, or leucocyte, and that if the leucocytes are of sufficient number and possess their normal vitality and strength, the pathological or toxic condition will be overcome and health restored.

Nuclein, when formed in the blood, is the result of the action of leucocytes upon the proteids. When introduced into the organism it acts in two ways: first, by immediately exciting the action of each leucocyte, causing it to proliferate or break into nuclei (leucocytosis),—and the fundamental axiom of physiology is that the more active the leucocytosis the greater the vital resistence;—second, it furnishes to the leucocyte material which, under a depressed vital condition, it is unable of itself to construct from the proteids, while it so strengthens and increases the number of leucocytes that it overpowers the toxic germs. Thus it may be seen that Protonuclein, which is a combination of all the nucleins of the body, is the true tissue builder and antitoxic principle of the organism. Protonuclein is derived from the lymphoid structures of healthy animals, without the use of any chemical. By a delicate mechanical process the nuclein is separated without changing the condition in which it exists in the organism.

According to the view of Dr. Wyeth, as given in his well-known standard text-book of surgery, an ulcer is the result of molecular death in the integument of mucous membrane and the underlying areolar or submucous tissue. As molecular death is caused by a loss of nutrition in those parts, it looked to me as if Protonuclein was the magic agent that could restore life by stimulating the lucocytes and thus vitalizing the *parts affected.* I determined to give it a fair trial and asked the manu-

facturers for a supply of their Protonuclein Special Powder for local use, and their Tablets for internal use, of which they kindly sent me a generous quantity. I herewith submit a number of most unpromising cases treated with this agent with surprising success, and I honestly believe that a trial of the preparation will yield remarkable results in every case of stubborn and unyielding ulceration.

Case.—Mr. S., aged 45, peddler, in good health, had had for 15 years a varicose indolent ulcer on right leg which had been open more or less all the time; size 4x8 inches; ¼–½ inch deep, indurated edges, inert unhealthy granulations. Treatment with Protonuclein Special Powder dusted over surface of ulcer, after a thorough cleansing of the same with hot bichloride, 1–3000, and after applying at the first dressing pure carbolic acid to the base. On top of the powder over the ulcer a pad of absorbent gauze was placed, and over all a cotton bandage from foot to knee. This dressing was changed but twice a week. Time of treatment from Sept. 16th to Oct. 24th, 1895, when the ulcer was perfectly healed and a rubber stocking ordered.

Case.—Mrs. A. G., aged 42, housewife. Varicose indolent ulcer, circular, rather deep, with indurated edges; had had same for years, though several times closed up by treatment. Local treatment Protonuclein Special Powder and internal use of Protonuclein Tablets. Time of treatment, twice a week.

Case.—Mrs. D. H., aged 30, housewife. Varicose ulcer, irritable and painful. Cured by four applications of the Protonuclein Special Powder locally. Time Oct. 10th to Oct. 24th, on which date she was discharged as cured.

Case.—K. L., aged 36, gripman on a cable road. In perfect condition except for an ulcer on his left leg caused originally, about ten years ago, by a horse's kick, and owing to the nature of his work aggravated by a varicose condition of his leg. Ulcer was never entirely healed up though he had been treated by a great number of physicians. During all this time he was constantly at work, but finally had to leave off working on account of the great pain caused by the ulcer. It was in this condition when he applied for treatment. The size of the ulcer was about 4x6 inches, deeply congested around the edges, which were ragged and indurated. It was about two inches deep, going below the deep fascia; base covered with pus, the odor emanating from it being something frightful. This was one of the worst ulcers I had seen in many a day. After cleaning it thoroughly with hot bichloride solution, 1–3000, and applying pure carbolic acid in solution over the whole ulcer, Protonuclein Special Powder was dusted over it. Diachylon adhesive rubber put over this and a cotton bandage firmly applied from foot to knee. This treatment, except the application of the carbolic acid, was given twice a week, and though the patient was rather irregular, the ulcer healed within ten weeks. Considering the irregularity of his coming and the fact that he was at work day in and day out for 14 to 16 hours, I considered the good result in this case astonishing.

There is no doubt that in private practice, where the treatment can be applied oftener and patients are under better control, an acceleration of a cure can be brought about, but even under the severe strain of a dispensary test the results were so uniformly good that the use of Protonuclein in all ulcerative processes was found to be an ideal measure.—By LOUIS COHN, M. D., N. Y. Polyclinic.

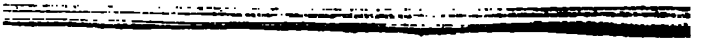
P. N. DE DUBOEAY, M. D., F. R. C. S., of Tallulah Falls, Rabun Co., Ga., Sept. 22, 1896, writes:

"I have used Papine, Bromidia and Iodia extensively in my practice, and expect to continue doing so, as these preparations undoubtedly are of great value. I have found your Iodia specially useful in cases of menstrual disorder generally, and as an alterative. Papine must of necessity come greatly into vogue with the general practitioner, relieving pain as it does without unpleasant after effects. It was of great value to me in treating the pain in a female suffering with (incurable) cancer."

Ether or Chloroform.—An important element in the choice of a general anæsthetic should be the patient's mental attitude. If he is panic-stricken or demoralized at the prospect of operation and no actual contra-indication exists ether is far safer than chloroform. Of course, in the presence of bronchitis or active renal disease, ether might better give way to chloroform, at least after unconsciousness has been established. —*Internat. Journal of Surgery.*

Thread Worms.—It is not sufficient to attack the rectum with enemata, but purgative medicine must also be given which shall act upon the cœcum and clear away the worms themselves and the mucus in which they are lodged. One may often see them coming away in large balls as the result of purgatives; and, until they are thoroughly cleared out, little benefit can be expected.—*Boston Medical and Surgical Journal.*

Treatment of Diphtheria.—Wickers recommends sodium hyposulphite as an adjuvant to the general treatment. He employs a saturated solution, mixed with an equal amount of glycerin, to be applied once or twice a day.—*Centralblatt für Innere Medicin.*



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